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ORIGINAL ARTICLES.

NOTES ON THE PATHOLOGY OF PELVIC INFLAMMATIONS.¹

BY A. J. C. SKENE, M.D.,
OF BROOKLYN, N. Y.

WHILE the knowledge of the pathology of pelvic inflammation has greatly advanced in recent times, there is still a wide diversity of opinion among authorities regarding its causation, and the relative frequency with which the several organs and tissues become involved.

This difference of opinion results from a difference in the methods of observation. Some have drawn their conclusions from clinical histories and from physical signs obtained by manual and instrumental exploration; others have made deductions from post-mortem examination; while quite recently a number have based their opinions upon the observations which they have made after abdominal section. To reach the facts requires prolonged and oft-repeated observation from all these points of view. One of the difficulties encountered in the observation, and one which has led to many differences of opinion in regard to the pathology, is that pelvic inflammations seldom come singly. Many of them come together, and so complicate one another that it is impossible to ascertain anything definite regarding the lesions, although investigated in every possible way.

It simplifies the subject and gives more definite results to consider separately the pathology of each form of inflammation which has been found to occur, and then to consider the groups which they naturally and actually form.

I. Pelvic Cellulitis.—This was at one time regarded as the most frequent of pelvic inflammations, but recent observations show that it does not take first rank in this respect. Extremists have hinted that it is very rare, and that when it does exist it is secondary to peritonitis or salpingitis. As a matter of fact, it occurs independently of either of these inflammations, and in this respect may be considered a distinct and primary affection. It is generally caused by sepsis, or by gonorrhoeal infection derived from the vagina or cervix uteri, and transmitted to the cellular tissue through the bloodvessels or lymphatics; or by contusions of the cellular tissues

which cause extravasation and necrosis without any apparent extrinsic infection. These conditions are especially operative in the puerperal state, but may be due to injuries received during surgical operations. Another known cause, although a very rare one, is the rupture of a vessel in the cellular tissue—a pelvic apoplexy. This does not necessarily cause inflammation of a distinctive character, and only does so, perhaps, when the blood is in a morbid state. These are the causes of primary cellulitis.

The course pursued by the inflammation is the same as in cellular tissue generally. It may end in resolution or in suppuration, the size and location of the abscess depending upon the extent of tissue involved. Pus is almost always discharged through the vagina, occasionally through the abdominal wall, rarely through the bladder or rectum. In a few cases the pus has burrowed outward and upward to the sheath of the psoas muscle. If the abscess opens at its most dependent part evacuation and drainage are complete, and recovery is sometimes so perfect that not a trace of the former disease can be found upon examination either during life or after death. This fact has been used as an argument to prove that a cellulitis did not exist.

This is not the invariable history of cellulitis. Suppuration may continue indefinitely, because the evacuation is incomplete and the drainage imperfect, owing either to the location of the opening in the abscess, or to the fact that there is a large mass of inflammatory products honeycombed with small abscesses. In some cases the abscess wall is very thick and is a long time in disappearing after the sac has closed. This leaves a solid mass in the cellular tissue and some fixation of the uterus. This condition is called chronic cellulitis by some, but it bears the same relation to inflammation as do ashes and charred timbers in a building to an extinct fire. Most of the extreme modern pathologists diagnose this condition as tubal, ovarian, or peritoneal inflammation.

II. Pelvic Peritonitis.—This occurs as a distinct affection. Its presence alone has been recognized clinically and abundantly demonstrated post-mortem.

The cause of primary peritonitis is sepsis conveyed through the lymphatics which run directly from the vagina and cervix uteri to the pelvic peritoneum. In this respect the causes of pelvic cellulitis and peritonitis are somewhat alike. When there are superficial abrasions of the mucous mem-

¹ Read before the Medical Society of the State of New York, February 3, 1891.

brane, the septic material in the vagina or cervix causes peritonitis, while deeper injuries, like lacerations, are prone to eventuate in cellulitis. This is only a possible explanation of well-known facts.

Among the causes of pelvic peritonitis are:

1. Certain constitutional conditions which predispose to inflammations of serous membranes, the most notable of which are advanced renal disease and tuberculosis.

2. Rupture of a Graafian follicle, presumably having morbid contents.

3. Exposure and excesses.

The relative importance of these is not well established. The fact, however, is known, that inflammations of the pelvic peritoneum and the pleura occur as primary affections when the cause cannot be definitely discovered. Perhaps some pathological state of the blood may be responsible for the predisposition, and some unnoticed slight traumatism may be the excitant.

Secondary pelvic peritonitis will be referred to later. Pelvic peritonitis may be circumscribed or may involve the whole pelvic peritoneum. In the primary form the process, as a rule, ends with transudation and exudation, and rarely does suppuration occur, unless the cause is sepsis of a virulent character, or tuberculosis. If suppuration occurs, or if there is a large serous transudation, the pus or serum accumulates in the sac of Douglas, and is walled-in, if the case does not end fatally, by an exudate which bridges over the sac of Douglas. If the walling-in is complete and protects the subject from fatal septicæmia, the pus is discharged through the rectum in all or the great majority of cases, unless evacuated by the surgeon. Adhesions take place where the inflamed surfaces meet. In mild cases these are generally limited to the abdominal ends of the tubes and their nearest neighbors, and to the most dependent parts of the peritoneum. Recovery follows, but is slow in all cases, and is seldom complete. The structures are more or less damaged by the exudate and adhesions, according to the extent of the disease, and in time the exudate and even the adhesions may be taken care of by absorption. The products of this inflammation have in the past been mistaken for the results of pelvic cellulitis. While they usually cause pain and discomfort and impair the functions of the pelvic organs, they do not tend to a fatal result, and generally yield to prolonged treatment.

III. *Salpingitis*.—This form of inflammation seldom occurs alone. Primary cases are due to tuberculosis, a hæmorrhage or occlusion of both ends of the tube. In the latter condition, the natural secretions accumulate and cause a limited inflammatory process. In the great majority of cases salpingitis is caused by endometritis, either catarrhal or septic.

It is sometimes found to exist in the absence of all the other forms of pelvic inflammations which we have considered.

When caused by catarrhal endometritis, salpingitis ends either in recovery or in hydrosalpinx, which may in time excite pelvic peritonitis, or it may, by discharging into the uterus, end in recovery, but leave a more or less damaged tube. Again, it may remain and give trouble until the tube is removed by the surgeon.

When the cause is septic or specific, pyosalpinx usually results. This leads to other and serious complications and has no tendency to recovery, except when after repeated attacks or a single violent one of peritonitis the diseased tube is walled-in above, and, by disintegration of the opposing tissues below, it opens into the rectum or into the cellular tissue, and then finds an exit through the vagina or other pelvic viscera. This does not always terminate the disease. Prolonged suppuration and septicæmia may cause a fatal termination.

IV. *Inflammation of the Ovaries*.—This occurs in a variety of forms, but there are only two which present distinct clinical histories: (a) The *acute*, which ends in suppuration, and (b) the *degenerative* or so-called *chronic ovaritis*.

(a) *Acute ovaritis*. Acute ovaritis is, as a rule, a secondary affection. The causes are puerperal and specific inflammations and neoplasms, and degenerative disease of the ovaries.

Ovarian abscesses found in connection with puerperal metro-peritonitis are familiar examples of the former, and suppurating ovarian cysts illustrate the latter. The termination of ovarian abscess is in death; at least that is the tendency—the abscess rupturing and causing fatal shock or peritonitis. The exceptions to this are when relief is given by the surgeon, before or at the time of rupture, and when the ovaritis sets up peritonitis before rupture and the ovary becomes walled up in the sac of Douglas. The abscess may also discharge through some of the pelvic viscera or be reached through the vagina or by abdominal section.

The important point to be observed in the pathology with reference to treatment is that there is a difference between those cases in which the diseased ovary is lodged in the sac of Douglas and walled-in by protecting exudate, and those that are not so guarded. This difference should determine whether the interference of the surgeon is to be immediate or delayed.

(b) *Chronic ovaritis*. This is characterized by histological changes rather than by the development of the products of ordinary inflammation, and is a very common affection. It has been claimed that it is caused by endometritis, the assertion being based upon the similarity of structure of the

endometrium and the ovarian tissue, and the fact that endometritis and this form of ovaritis usually coexist. Much might be said on this point, but time only permits me to add that this method of causation is not proven. As nearly as can be ascertained the cause is malnutrition, giving rise to certain degenerative changes, which in their pathological histology bear a much closer resemblance to hepatitis and nephritis than to the products of inflammation in connective tissues and in serous and mucous membranes. The ovary is peculiar in this, that each performance of its function entails a certain irreparable destruction of a portion of its tissue. It is an organ that is continually degenerating during its functional activity, and hence it is difficult to find the line of demarcation between the physiological destruction of tissue and the pathological changes which occur from inflammation—difficult, I should say, to all but those who have a proclivity to remove ovaries. Surgeons of that tendency find evidences of disease with a facility which startles skilled pathologists. Ovaritis of this form, in an ovary that is not displaced, does not tend to fatal results, and hence does not call for ovariectomy. In many cases the degenerative changes in structure lead to atrophy, arrest of function, and the disappearance of all symptoms. Such atrophied ovaries are supposed to be the site of neuralgic pain, which is so violent and persistent as to call for extirpation. This is not invariably the condition which causes pelvic pain, if we may judge from the fact that removal of degenerated ovaries does not always give relief.

Any of the inflammations here referred to may lead to one or to all the others—that is, the one, instead of running its course alone and uncomplicated, may excite secondary inflammation in any of the other organs or tissues. But either of them may occur alone, and they all may occur in succession, and even coexist.

Cellulitis often leads to secondary peritonitis, while peritoneal inflammation rarely extends to the cellular tissue. When such an extension occurs it is usually from burrowing of pus that has become walled-in, forming an abscess in the sac of Douglas. This takes place late in the progress of the disease and is sometimes considered a recurrence or relapse of the peritonitis. Along with the acute symptoms, which are lighted up by the burrowing of pus, come the physical signs of the cellulitis. When suppuration takes place in the cellular tissue it is often diffused and does not present a well-defined pus sac as in primary cellulitis.

Peritonitis frequently damages the ovaries and outer ends of the tubes, but it is seldom that a general inflammation of either is caused by peritonitis.

When all of these coexist, inflammation of the tubes and ovaries occurs first, as a rule.

Looking at the subject as a whole, there are a few well-defined facts. The first of these is, that no matter where inflammation begins or what parts it involves, if the process gives rise to the formation of pus, the pus must be removed by the surgeon either through the vagina or by laparotomy in the majority of cases. Still another fact worthy of mention is, that in case the inflammation subsides before suppuration occurs, the resultant lesions are rarely improved by operative surgery—they do best upon general treatment.

By way of making more clear the foregoing statements in regard to the pathology, a word may be said about the lesions which remain or which may develop after laparotomy. The adhesions which surround a tube filled with pus and need to be broken up or divided in order to remove the tube, reunite, and more adhesions form. This is inevitable and must be tolerated; but when a laparotomy is done for the purpose of diagnosis or to remove an inflamed organ which is presumed to be offending, the lesions are seldom improved, and the suffering is not rendered less bearable to the patient.

167 CLINTON STREET.

FORCIBLE INTERMITTENT TRACTION IN THE TREATMENT OF CLUB-FOOT.¹

BY NEWTON M. SHAFFER, M.D.,

ATTENDING SURGEON IN CHARGE OF THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL; CONSULTING SURGEON TO ST. LUKE'S HOSPITAL, NEW YORK.

THE phrase "forcible intermittent traction" is intended to describe a simple but effective operation for reducing certain non-inflammatory chronic deformities, which the author of this paper introduced to the medical profession in the *New York Medical Record* for November 23, 1878, in a paper entitled "Traction in the Treatment of Club-foot." The subject was further amplified in a paper on "Knock-knee and Bow-legs," published in *The American Journal of Obstetrics and Diseases of Women and Children*, in July, 1881.

The operation, which was referred to in the papers mentioned as "an exaggerated momentary pressure," is based upon the tolerance of the skin and subcutaneous tissues to a very great degree of pressure for a brief period of time, and it is further based upon the well-known law that in order to remove a given obstacle the "force must exceed the resistance." The chief causes which led to the application of these two principles to the reduction of chronic deformity were especially the imperfections in the

¹ Read before the Orthopædic Section of the Tenth International Medical Congress, held in Berlin, August, 1890.

conventional apparatus for the treatment of club-foot, and the unsatisfactory results that followed their use.

The first thing that I strove to accomplish was to devise an apparatus which could be made to fit any ordinary club-foot at will, with the mechanism so arranged that when the initial force was used it could be directly applied to the resisting tissues. In short, I endeavored to imitate the action of the trained human hand when applied to the reduction of the deformity, and in all of the instruments here described it would seem that not only this object, but even more, has been accomplished, when one estimates the degree of force which the human hand is capable of applying and compares it with that exerted by the apparatus here described.

In using forcible, intermittent traction for the reduction of the deformities of talipes, either with or without tenotomy, myotomy, or syndesmotomy, the apparatus is so arranged that the pressure may be carried up to a point of educated tolerance by gradually increasing pressure, and as soon as the patient indicates that a maximum pressure is reached all force is to be *instantly removed*. If the apparatus is properly adjusted, each forcible traction will be followed by a yielding of the deformity, and if it is applied frequently and systematically, the improvement will soon be very noticeable. If the deformity fails to yield after a sufficient trial, a free subcutaneous section of all the easily reached muscular and fibrous tissues will so modify the resistance that the condition will be a formidable one which does not then yield to this force.

In an article published in the *New York Medical Journal*,¹ March 5 and 12, 1887, I gave some directions for the use of forcible intermittent traction in the treatment of club-foot. Time has demonstrated their general correctness, and I reproduce them here with such modifications as experience suggests.

The first step is to adjust the apparatus *so that it will exactly fit the deformity*. Determine at the first application how much traction can be tolerated by the patient without causing pain. Proceed easily and gently at first, and after a few applications the traction may be increased to any desired extent without difficulty. After the patient is accustomed to the apparatus, keep the traction-shoe applied the greater part of the day, using a simple retention, walking, or a night, apparatus at all other times. By this means the foot will not be permitted to relapse into its former position of extreme deformity.

When the patient learns that he can control the amount of traction, commence a systematic application of the forcible intermittent traction.

The traction should be applied every fifteen or thirty minutes for the period of educated tolerance, be it for one second or five minutes. Patients vary greatly in their ability to bear the pressure, but all may be educated very soon to endure a sufficient degree of pressure to make "the force exceed the resistance" to an extent which shows an appreciable gain in a short time. Experience proves that what is gained during the seconds or minutes of forcible traction is not wholly lost during the period of intermission, and during the latter time the patient may walk about in the traction apparatus, which is adjusted to an easy position with a minimum pressure.

If these rules are followed there will soon be found a lengthening of the plantar tissues, and the gastrocnemius will become visibly longer. In the average case the shortened tissues will yield without the use of the knife; but in some cases, after a few weeks of forcible traction, the resisting tissues seem to yield no further—or, yielding, will, like an elastic cord, gradually shorten soon after the traction is removed. As soon as it is demonstrated that this is the case, all the resisting muscular and fibrous tissues should be divided subcutaneously, when it is probable that one prolonged traction under anæsthesia will remove the deformity.

Excoriations are not likely to occur, and if suitable precautions are taken they do not occur at all. The only case of troublesome excoriations that has happened in my own experience resulted from a too prolonged traction after operation and under anæsthesia.

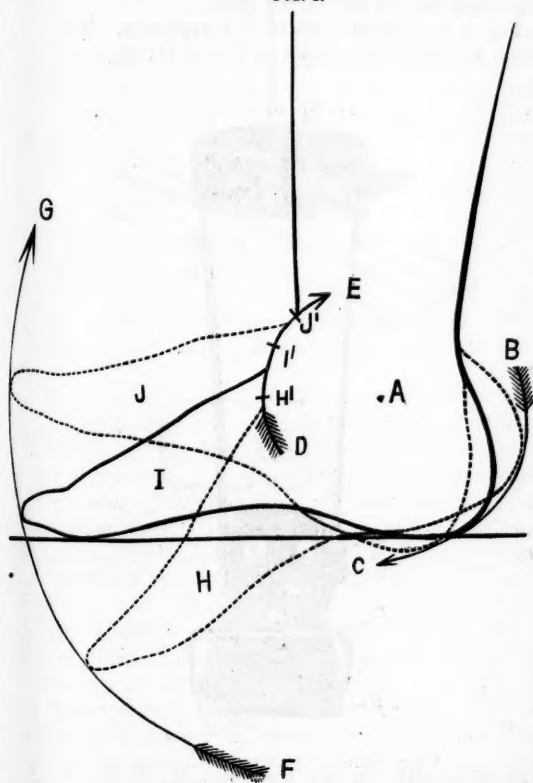
In using forcible traction without tenotomy, etc., I instruct someone interested in the patient in the use of the apparatus, so that treatment may be carried out at home. This is always very easily accomplished in private practice. The pain inflicted by properly applied forcible traction is so slight that neither the patients, if they are children, nor their parents complain. Adolescents and adults bear it without any complaint whatever.

The question will at once be asked, "What is the length of time required to secure a good result by the use of this method?" My answer is, that if subcutaneous section and forcible traction are used as the initial procedures, the reduction of the deformity can be ordinarily accomplished at one sitting during the anæsthetic stage of the operation. But if a preliminary trial of traction is made, and if the conditions favor its use to the exclusion of tenotomy, etc., the treatment will probably require six months or a year. As is well known, it does not do to dispense entirely with treatment after the simple reduction of the deformity by operation. An apparatus must still be worn, and all that is ordinarily gained by the cutting operation is the immediate reduction of the deformity. At the end of a

¹ "The Use of Traction in the Treatment of Club-foot."

year the patient who persists in the traction treatment alone will have a much better foot than the one which is subjected to the cutting process. When time is of importance, as it is among some dispensary patients, the rapid process should be employed. When, on the contrary, time is not so important an element, and when the best attainable result is desired by the patient or his parents, it is well to use the forcible traction alone until it is demonstrated that the result cannot be obtained by this means. And when it is stated that several obstinate cases, which were condemned to osteotomy—or amputation—have been cured by forcible traction alone, and without the aid of the knife, it will be seen that forcible traction promises a great deal.

FIG. 1.



Three forms of apparatus are used: one for the reduction of simple equinus, known as the "antero-posterior traction-shoe;" and two for the reduction of equino-varus: one known as the "internal lateral traction-shoe," and the other as the "external lateral traction-shoe."

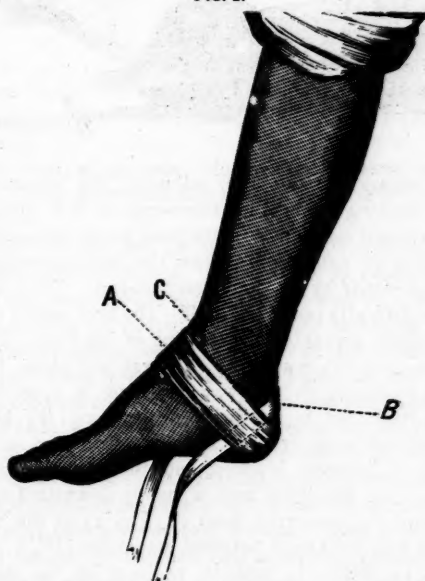
I will briefly describe these instruments, calling attention to the antero-posterior apparatus first.

The centre of antero-posterior motion at the

ankle follows an imaginary line which touches the lower end of the external malleolus, and passes out below the internal malleolus. When the ankle is flexed or extended, motion takes place upon this transverse axis. (A, Fig. 1.) If we study the diagram (Fig. 1) further we will see that A, I, shows the foot in the right-angled position—i. e., with the sole of the foot forming an angle of 90° with the leg; A, H, shows the foot in extreme extension, the sole of the foot being at an angle of about 135° with the leg. A, J, shows the foot in extreme flexion, the sole of the foot forming an angle of about 70° with the leg.

The position of the foot in talipes equinus is represented by the position A, H, and the object of treatment is to carry the foot from A, H, to the position A, J. The whole foot rotates upon the centre A. Hence the heel must describe the arc of a circle represented by the curved arrow, B, C., and it will be noted that the direction of this curve is *downward and forward*. The toes, also, rotate around the same centre, and in passing from H to J they follow the curved arrow, F, G, the direction of which is *upward and forward*. The head of the astragalus lying *above* the centre of motion A, (the heel being below the centre) must move in a direction opposite to the heel. The head of the astragalus follows the direction of the curved arrow D, E, its direction being *upward and backward*.

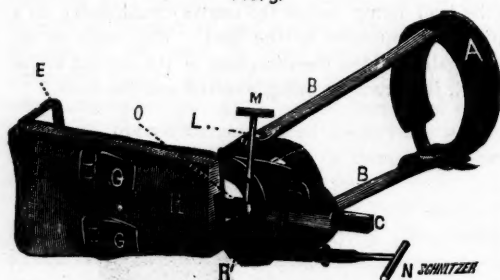
FIG. 2.



In the conventional forms of club-foot shoe for the treatment of talipes equinus a strap is passed over the neck of the astragalus, and in this way the

heel is secured in the heel-cup of the apparatus. When an attempt is made to flex the ankle, the upward movement of the head of the astragalus is at once arrested, and the heel slips beyond the control of the apparatus. Anything which interferes with the *descent* of the heel, or with the *ascent* of the head of the apparatus at once interferes with flexion of the ankle. My first step, after having recognized the mechanism of the antero-posterior movement of the ankle, was to apply a "traction heel-strap" (see Fig. 2, B), which passes over the heel, and is then secured to the *anterior* part of the foot-plate of the apparatus (B, Fig. 5). By this means the heel can be absolutely kept in its position—*i. e.*, it can be held securely, and prevented from rotating *upward* and *backward* away from the apparatus. But this did not fully meet the conditions. The tight astragalus strap still prevented the *upward* movement of the astragalus. The next step was to divide the foot-plate of the apparatus transversely at a point corresponding with the medio-tarsal joint, and to connect the *heel* part with the *tarsal* part by a traction-rod. (Fig. 3.) We are now enabled to loosen

FIG. 3.



the astragalus strap after adjusting the apparatus and securing the heel traction-strap, so as to permit the upward movement of the head of the astragalus—while we can forcibly draw the heel *downward* and *forward* by the long traction-rod. Then another difficulty presented itself. The heel part of the foot-plate prevented the descent of the heel. For some time the reason for this was not plain, but it is explained in this way: as soon as considerable resistance is met with in bringing the heel downward and forward, the centre motion at A (Fig. 1) becomes blocked, and the centre of motion, upon which the heel is passing downward and forward, is transferred from A (Fig. 1) to the upward and backward rotating astragalus (H', I', J', Fig. 1), which is held in position by the strap already referred to. The heel, therefore, moves downward and forward upon a radius more than twice that of an unopposed movement in the normal ankle, and descends much more rapidly than the

foot-plate of the apparatus, which has a transverse centre corresponding with the normal axis of rotation. The next step was, therefore, to remove the heel part of the foot-plate, and the result is the apparatus shown in Figs. 3 and 4. Fig. 3 is a view of the lower part of the foot-plate. The buckles, G, G, for the attachment of the traction heel-strap; the traction-rod, C; the cylinder, P; the flexion and extension worm and screw controlled by the key, M, are plainly shown. The key, M, is in position to throw the anterior part of the foot-piece forward. The opening, O, for the descent of the heel, in the foot part of the heel-cap, surrounded by its strong rim, R, is also shown. When traction is made, and the heel is brought downward and forward, it passes through this opening unopposed by any obstruction.

Fig. 4 is another view of the apparatus. The worm and screw are shown at C and D; the heel-

FIG. 4.



cup at E, with the two openings, M, M, for the astragalus retention-strap; the opening, O, for the descending heel, and the bridge, F, for the reflected heel traction-strap.

Figs. 5, 6, and 7 show the detail of the action of this apparatus. In Fig. 5 the apparatus is adjusted to fit the deformity, the astragalus retention-strap, A, and the heel traction-strap, B, being in position. In Fig. 6 the apparatus has been carried by the key from the position of extension to the right-angled position, the foot still remaining, however, in its

FIG. 5.

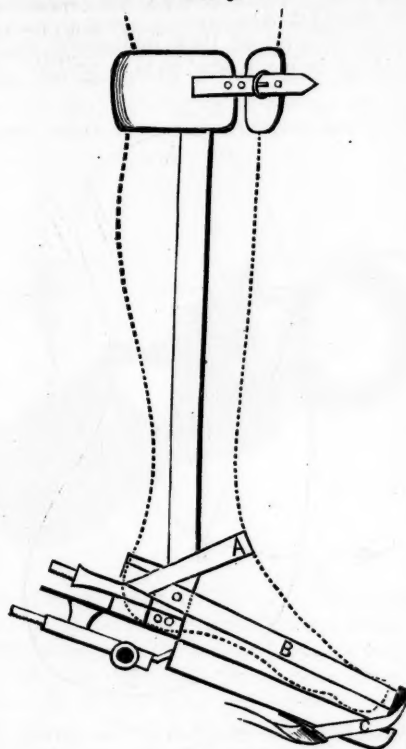
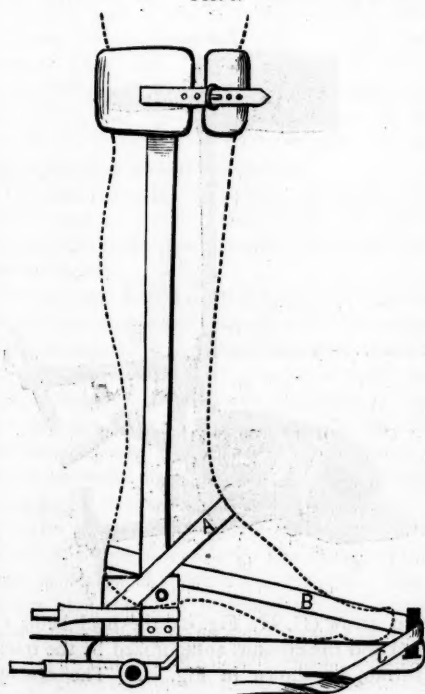


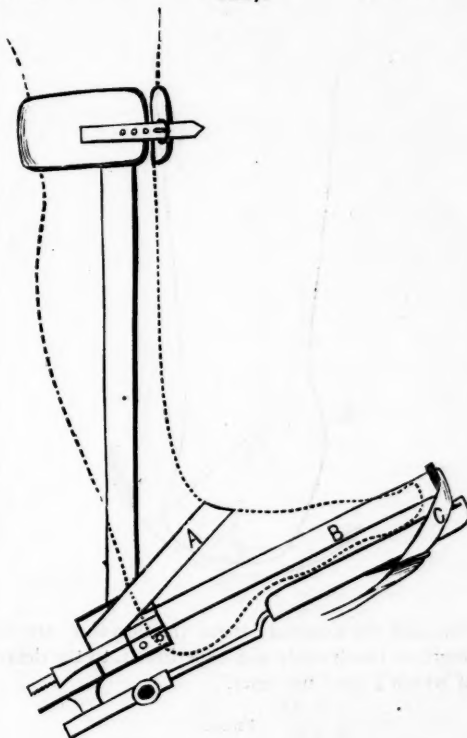
FIG. 6.



13°

extended position. The apparatus has changed, but the foot has not. In Fig. 7 the apparatus has been

FIG. 7.



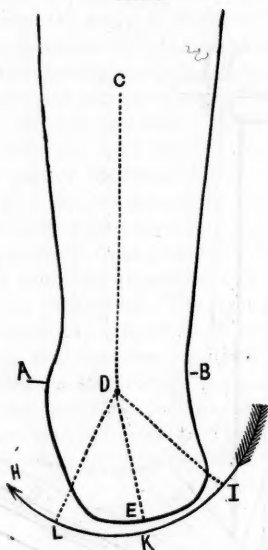
placed by the key in a position of flexion, and the traction-rod has been used to throw the foot-plate forward.

The heel, which must follow this movement, has been drawn downward and forward into the desired position.

The force that can be applied by this apparatus is practically unlimited. Many cases of obstinate club-foot have yielded to this apparatus alone. The force can be applied with mechanical exactness at the desired points, and a very great degree of traction is exerted upon all the tarsal joints, as well as upon the post-tibial tissues. Under anaesthesia and with free subcutaneous division of the tendo Achillis and the plantar fascia it can be made to do very efficient service in desperate cases; while in ordinary cases of club-foot, in which there is a residual resistance after free subcutaneous incisions, there is little or no difficulty in removing the deformity, provided the lateral displacement of the tarsus does not prevent the application of a strictly antero-posterior force. If the "lateral deformity" of the tarsus be considerable, one of the lateral instruments should be used.

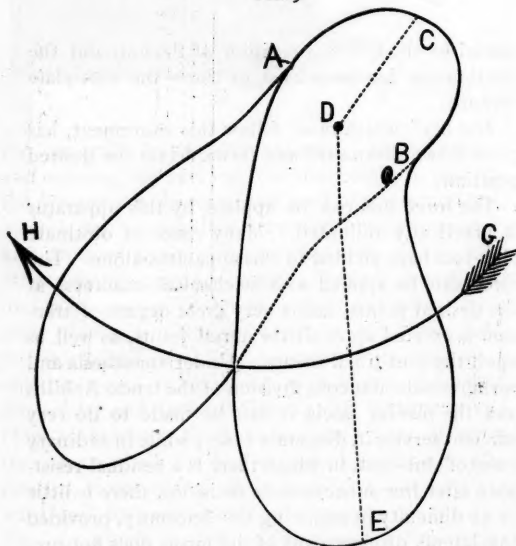
The internal lateral traction shoe will now be described. This apparatus is a *pusher*, being applied to the *concave* side of the deformity. Its general outline and appearance is shown in Figs. 11 and 12.

FIG. 8.



This and the external lateral traction shoe are the results of much study and experiment, to the details of which I need not refer.

FIG. 9.

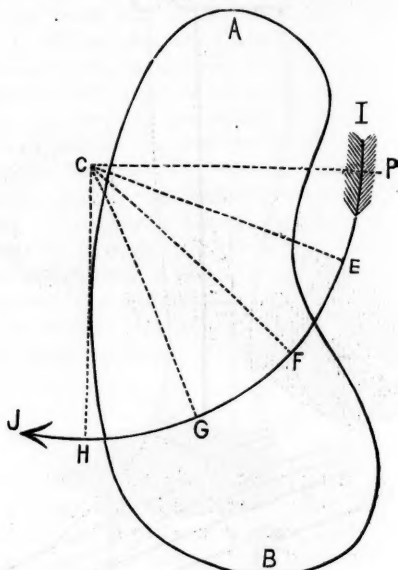


The deformity of equino-varus is a very complex one. The tarsus is rotated upon three axes: first, upon a transverse axis (equinus); second, upon an

antero-posterior axis (Fig. 8); and third, upon a vertical axis (Fig. 9).

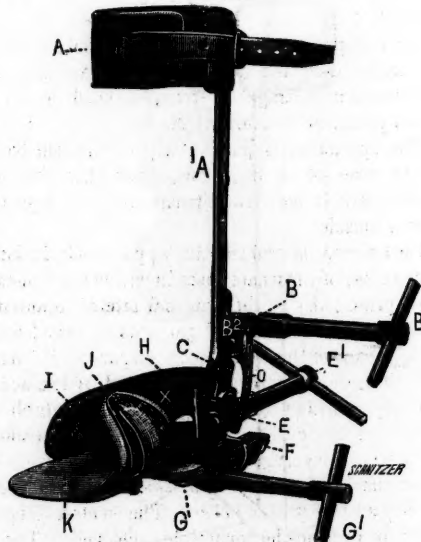
In order to meet all these indications, an apparatus should be constructed so as to produce a late-

FIG. 10.



ral pressure in the direction of the curved arrow (I, H, Fig. 8), and also in the direction of the

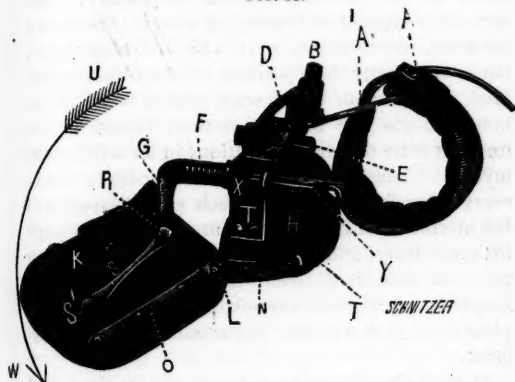
FIG. 11.



curved arrow (G, H, Fig. 9), the heel being controlled and the equinus antagonized by the traction heel-strap, as shown in Fig. 7. The centre of

motion for pushing the os calcis toward a straighter position (downward or outward) cannot be located in the internal lateral apparatus at the point indicated (D, in Fig. 8), so it is placed at the point B (Fig. 8). The centre of motion for the deformity which occurs on a vertical axis should be

FIG. 12.



located at the point C (Fig. 10). This being understood, we may now describe the apparatus. The inside lateral pusher is shown in Figs. 11 and 12.

In Fig. 11 the key B', acting on a hinge at C, throws the hinged lever and screw O toward the rotated heel. The key E' raises the toes by a worm-and-screw movement at E, while the key G' throws the anterior part of the foot *forward and outward*, as shown by the centre C (Fig. 10) and by the centre L (Fig. 12). There is an open heel-plate for the descent of the heel upon the rotating astragalar centre, and the traction heel-strap, as well as the retention astragalar strap, is used as in the antero-posterior traction apparatus.

This apparatus is particularly applicable to obstinate cases of equino-varus, where the resistance is principally in the plantar tissues and in the gastrocnemius muscle.

The external lateral traction apparatus is devised to meet a class of obstinate cases in which the resistance exists principally in the internal lateral ligament of the ankle-joint and in the ligaments of tarsal bones. This apparatus has not been engraved in detail. Its action can, however, be illustrated by the accompanying diagrams (Figs. 13 and 14), which will explain its mode of action, and will at least suggest the powerful leverage it is capable of exerting. The apparatus is applied to the *convex* side of the deformity and acts as a *puller*. The sketch (Fig. 13) shows in outline the principle involved. The apparatus here shown is intended for the outside of the left foot and leg in a case of equino varus. The bar, H, passes downward in a line which corresponds with the fibula and terminates in an antero-posterior

hinge. Connected with this hinge is a *retraction-rod*, E, which when used with a key at its opening,

FIG. 13.

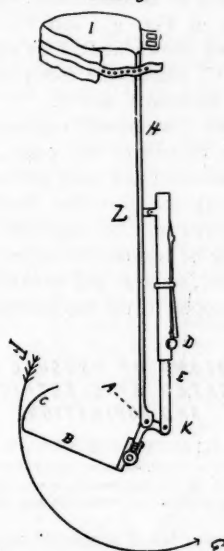
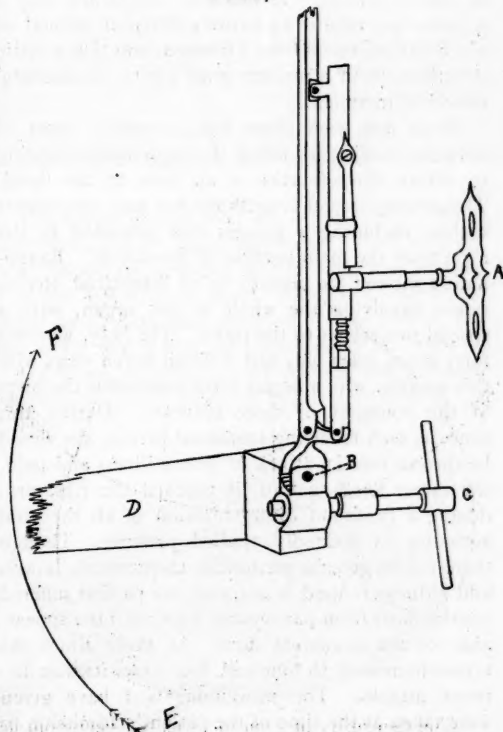


FIG. 14.



D, carries the distal part of the apparatus *downward and outward* upon the centre A in the segment of

a circle indicated by the curved arrow F, G. Of course, it would be useless to apply this *outward* and *downward* movement unless the heel is restrained. This is accomplished by the traction heel-strap (as in Fig. 2), and by means of the worm and screw shown at B, Fig. 14, which, when used by key C, places the foot-piece, D, at any desired point between E and F.

Each of these instruments represents the principle named in the title of this paper, viz., forcible, intermittent traction, and each instrument has produced results that are more than satisfactory. The principle involved may be amplified and an osteoclast can easily be constructed upon the principles here enumerated, so great and so easily controlled is the force developed by the mechanism described.

A CYSTIC MYOMA OF UNUSUAL CHARACTER TREATED BY ELECTRICITY AND ASPIRATION.

BY G. BETTON MASSEY, M.D.,

PHYSICIAN TO THE GYNECOLOGICAL DEPARTMENT OF HOWARD
HOSPITAL AND TO THE DISPENSARY FOR THE TREATMENT
OF THE DISEASES OF WOMEN BY ELECTRICITY.

THIS case is worthy of a special report because of the peculiar and most painful swelling of the tumor at stated periods. It has also taught me that a myoma may require an entirely different method of electrical treatment from a fibroma, and that a cystic degeneration of a myoma is no bar to its successful electrical treatment.

When first seen there was a nodular mass of irregular consistency filling the pelvis and extending to within three-fourths of an inch of the navel. The greatest lateral breadth was five and one-quarter inches, including a process that extended to the right from the main portion of the tumor. Examination showed the mass to be an interstitial uterine tumor involving the whole of the organ, with a special projection to the right. The lady, who was forty-seven years old, had suffered seven years with this trouble, which began three years after the birth of the youngest of three children. During this time, at each recurring menstrual period, she would be thrown into an attack of severe illness and pain, the tumor swelling until it touched the ribs, producing a profound disorganization of all the vital activities by suddenly applied pressure. Though there was no general peritonitis, the stomach, bowels and kidneys refused to act, and the patient suffered continuously from paroxysmal pain until the appearance of the menstrual flow. At these times the tumor increased to four and five times its size between attacks. The measurements I have given were taken at the time of the patient's admission to my sanitarium, December 3, 1889, and were smaller than they had been for several months. There was

no history of hæmorrhages or discharges of any kind, which I think is characteristic of myomata, and the menstrual flow was scant and somewhat irregular.

Treatment was begun by the Apostoli intra-uterine method, and at the end of a month the patient was in a greatly improved condition. This, however, did not last long, for there was a perceptible increase in the size of the tumor in January, 1890, with other signs of an impending attack. No attack occurred, nevertheless, until the following April, but I was greatly disappointed at the obstinate refusal of the tumor to decrease in size, which I am now sure was due to the irritation caused by too frequent intra-uterine applications in an oedematous myoma. The applications were generally made every other day, but caused such painful spasms of the uterine mass that the current strength was kept between forty and seventy milliamperes. Each pole was used at different times. The result was simply to postpone the attack, which came on with great force in April, after the cessation of the treatment.

During the following summer the patient had several severe attacks, the tumor failed to go down to the size usually maintained between attacks, and the patient, much reduced in strength, was further troubled with oedema of the right leg. Rejecting my advice that an operation be performed before the appearance of another such attack as I had witnessed, the patient and her friends urged the continuance of electricity until its various methods had been thoroughly tried. I, therefore, began the use of a method which I have since learned is similar to that of Damion, of Paris, namely: vagino-abdominal galvanic alternatives. The Apostoli clay pad was used in the usual position, and for the active pole a cotton-covered carbon electrode in the vagina pressed well up against the growth. By this method 150 milliamperes were readily turned on without discomfort, the current being decreased, reversed, and again turned on without shock by means of the controller. This was repeated six times at each sitting.

This method of treatment, which has been in my experience usually ineffective in hard fibroids, gave immediate results in this soft muscular growth, ameliorating the symptoms and gradually effecting a decrease in size. Recognizing the contractile nature of this growth, I began also to apply strong primary faradic currents to it through the thin abdominal walls, the active electrode being the size of the hand, with a large dispersing electrode on the back. The relief this caused was always immediate though doubtless temporary, for a three-minutes application of a gradually produced strong current caused a diminution in the size of the right wing of the tumor that was plainly perceptible to both sight

and touch. As, however, but little permanent reduction was occurring, a more thorough examination was made, disclosing the presence of several cysts of considerable size in the right extension of the growth. The patient was at once readmitted into the sanitarium and the largest cyst aspirated through the abdominal wall, two ounces of a clear, straw-colored liquid being drawn off. After a microscopical examination the liquid was pronounced by Dr. W. M. L. Coplin to be from a degenerating myoma, and contained many broken-down blood-corpuscles. After this procedure, and after each of five subsequent aspirations of different cysts, the tumor showed a continuous decrease, the contractions produced by the current becoming permanent. The electrical treatment by the modified method was continued for several months, but owing to the patient living some distance from Philadelphia the applications could not be made oftener than once per week. The tumor, which is now no larger than a small orange, is continuously decreasing in size, and has for some four months passed out of the life of the lady, who is no longer conscious of it unless reminded of its presence by others. She is in the enjoyment of perfect health and appears at least ten years younger than when I first saw her.

I have given the exact details of this case because it has been already partially reported by me as an electrical failure, in a discussion before the American Association of Obstetricians and Gynecologists in September, 1890. In the sequel, as seen, it is by no means a failure, and illustrates most admirably the denutritive and contractile power of dense interpolar action, while at the same time warning us of the inefficiency of intra-uterine galvanic applications in myo-cystic growths, in spite of their great value in ordinary fibroids.

In reviewing this case at a period of time sufficiently remote to permit of an accurate estimation of results, I cannot refrain from a feeling of satisfaction that they were obtained without the patient passing through an operative shadow of death, without mutilation, and with an abdominal wall that will remain free from the possibility of a future hernial weakness.

212 SOUTH FIFTEENTH ST.

IMPROVED EYE-PADS FOR THE AFTER-DRESSING IN CATARACT OPERATIONS.

BY L. WEBSTER FOX, M.D.,
OF PHILADELPHIA.

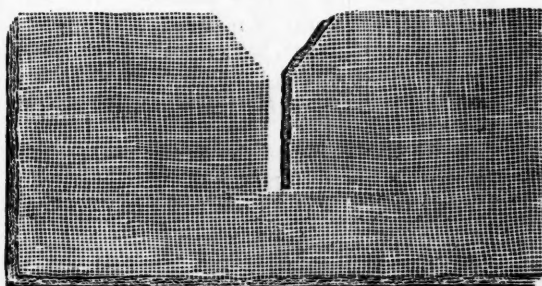
THE after-dressing in cataract operation is a very important factor in its successful termination. Prior to the days of Von Graefe very little or no dry dressings were applied in the after-treatment in ophthalmic operations.

Before that day the lids were held in place by adhesive plaster or simple bandages. Von Graefe, however, changed this mode of after-dressing, and his followers have tenaciously adhered to his iron-clad rules ever since.

Several years ago Dr. Michel, of Charleston, and Dr. Chisolm, of Baltimore, revived, as they called it, the "rational method" of after-treatment in cataract operations, simply using adhesive-plaster dressings. In the light of our present knowledge of aseptic surgery there are many who still follow the rules given by Von Graefe.

Every ophthalmic surgeon has his own peculiar way of applying a dressing to an eyeball. Patent lint and aseptic absorbent cotton held in place by a bandage constitutes this dressing. I have used such a dressing for the past ten years and the results obtained have been all that could be desired. The preparation of eye dressings has always taken considerable time and their adjustment is not always satisfactory.

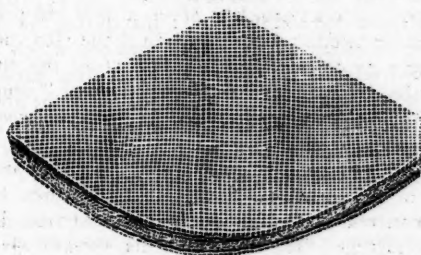
FIG. 1.



The eye-pads now used are of two kinds, black and white, and are made as follows: First, a lining of antiseptic gauze, then a layer of absorbent cotton, next the black linen sheet, and lastly, the white gauze for the external covering. The size of the pad is six and a half by three and a half inches.

The white pads (Fig. 1) are made in like manner, omitting the black linen, all hydronaphtholated.

FIG. 2.



The smaller pads fit closely over the eyeballs (lids closed), the material being identical with that of the

larger ones. Both large and small pads are shaped and cut by a steel die. They fit comfortably and evenly to the face, being held in place either by adhesive strips or a knitted bandage. I am indebted to Messrs. Seabury and Johnson for carrying out my suggestions in the making of these eye-pads.

1304 WALNUT ST.

THE ASEPTIC METHOD AS APPLIED TO INTRA-NASAL SURGERY.¹

BY JOHN O. ROE, M.D.,
OF ROCHESTER, N. Y.

No medical or surgical procedure has shown a more remarkable growth than the antiseptic method as applied to the treatment of wounds—a method which has created a new epoch in the art of surgery, and has made immortal the name of its first scientific expounder.

In the earliest application of this method the primary object was to destroy the noxious germs which infest the wound and which obstruct the healing of the part by the putrefactive or fermentative processes due to their presence. This early procedure, which may be regarded as strictly antiseptic in its character, has gradually given way to the method of asepsis, the purpose of which is to prevent the infectious germs from gaining entrance to the wound.

In the application of the aseptic method, nasal surgery has not kept pace with other branches of the surgical art; and, therefore, the result of intra-nasal operations cannot compare favorably with operations upon other parts of the body in which aseptic measures are more thoroughly and efficiently employed. It is on this account that some rhinologists regard with disfavor the performance of any important surgical operations in the nasal cavity. The intra-nasal surfaces are considered so intolerant to foreign substances that it is quite generally believed that any method which renders the nasal cavity aseptic after an operation cannot be tolerated by the patient. It is my purpose to show in this paper that aseptic measures can be as adequately and successfully employed in intra-nasal as in other surgical operations; that the field of operation can be as thoroughly cleansed and sterilized; that during the operative procedure all the aseptic measures which are deemed essential in operations upon other parts of the body, can and should be carried out in the nose; and that in the dressing of the wound the parts can also be completely sterilized and sealed both to internal and external noxious influences.

¹ Read before the Laryngological Section of the Tenth International Medical Congress, Berlin, August 7, 1890. (In the first report of this Section sent to the journals by its Secretary a synopsis of this paper was omitted, for the reason that the copy of it sent to him was lost in the mail. *Vide* Internat. Centralbl., Nov. 1890, p. 234.)

In order to ascertain the methods which are at present employed by different operators in this field of surgery, I wrote to a number of distinguished specialists, requesting from each a brief statement of the procedure which he adopted in the dressing of wounds of the nose after operations. I regret that the limit of this paper does not permit me to give full credit to my friends for their valuable communications, but I shall reserve this for another article. Only one of the number adopted a method which he deemed aseptic in its nature. Nearly all, however, considered the employment of some kind of antiseptic measures after operations of very great importance; but everyone who expressed himself upon the subject believed that the comparative inaccessibility of the nasal cavity and the peculiar office and function of the nose precluded the possibility of employing any other than the "open method" in the healing of intra-nasal wounds.

The disadvantages attending the open method and the dangers to which the patient is subject are many. The first and most immediate danger is that of hæmorrhage after the styptic effects of the cocaine have disappeared. Again, there is a danger arising from infection due to the absorption of purulent or other noxious substances which may be generated in the nose, or to the germs of infectious diseases, such as erysipelas and the like, to which the unprotected surface is exposed. Moreover, there is the general inconvenience due to the great amount of care and attention required, and to the very frequent use of antiseptic washes and sprays necessary, which cannot be employed by the surgeon as often as the conditions require, and which, if left to the patient, will in almost every case be very imperfectly performed.

The disadvantages and inconveniences of the open method have suggested to some operators the use of some form of closed dressing. The method, however, that is usually employed is covering the wound with small pledgets of boric acid, bichloride or iodoform cotton, wool, or gauze. The inadequacy of such coverings is apparent. They are not only insufficient to exclude from the wound the germs contained in the acrid nasal secretions and those floating in the atmosphere, but such bits of cotton or wool simply lie in the nostril as foreign irritating substances.

Firmly convinced of the importance of some form of closed dressing, I was some time ago led to adopt certain measures which would avoid the defects just mentioned, and which would render the nasal cavity as nearly as possible aseptic during the healing of the wound. The methods which I have found best suited to this purpose I will briefly describe.

Previous to the performance of the operation, the nasal cavity is thoroughly cleansed with a warm

alkaline antiseptic solution, consisting of salt, boric acid, and bichloride of mercury (1 to 4000). It is needless to say that the instruments should be as scrupulously clean and sterilized as in operations upon other parts. A sterilized cocaine solution is then thoroughly applied (either in the form of a spray or by means of cotton wound upon a probe) until the parts are rendered insensible. The advantages of cocaine are very great. It not only relieves the pain of the operation, but, by contracting the soft tissues and by preventing hæmorrhage, it greatly facilitates carrying out the subsequent aseptic procedure.

After the operation is completed, and the wound is completely cleansed from all débris, irrigated with a hot solution of sodium chloride and bichloride of mercury (1 to 4000), and thoroughly dried, the wound, or rather the whole of the nostril, is dusted full of iodoform powder. The nose is then carefully and thoroughly filled with an antiseptic dressing, so as to seal hermetically the cut surfaces against bacterial invasion. This is done by means of plugs, consisting of thin metallic plates evenly, carefully and firmly wound with antiseptically prepared Angora wool or bichloride cotton, and which before being introduced are dipped into a solution of bichloride of mercury (1 to 3000). The utmost care must be exercised in plugging the nostril. The metal plugs should be of such size and shape that, when wound with cotton and inserted in the nostril, they completely cover the wounded surface. The thickness of the plug, which is regulated by the amount of cotton or wool that is wound on it, should be carefully adapted to the size and shape of the cavity which is to be plugged, so that it exerts an equable and somewhat firm pressure upon the whole of the wounded surface. The plug, when thus prepared, is firmly grasped with a pair of strong dressing forceps and carefully inserted, the nostril being dilated with a suitable speculum, and illuminated to enable the operator to guide the plug to its proper place. The metal plates can be made of any material. A flexible metal, like tin or copper, in thin sheets is preferable, as it permits the plugs to be bent to the exact shape and contour of the cavity. Ordinarily the plate is covered so thickly with the cotton as to prevent any irritation from chemical combinations with the metal. However, to guard against the possibility of this, they can be made of aluminum. The plug should not, when inserted, exert so much pressure as to be irritating to the patient, who should experience no more than the slight discomfort of being unable to breathe through that nostril.

When an operation in one nostril is sufficiently extensive to involve both the upper and lower portions, it is impossible to introduce a plug wide

enough to cover the whole extent of the wounded surface. It then becomes necessary to introduce two or more plugs, beginning at the top of the nostril. The first plug is so shaped that it will fit the upper contour of the passage, and the successive plugs are put in below, until the last one passes evenly and snugly along the floor of the nostril. The length of the plugs should be governed by the extent of the wound and also by the depth of the nasal passage. There is no danger of introducing in the upper portion plugs which are too long, as the nostril will not permit it; but the one along the floor of the nose should not be long enough to reach the orifice of the Eustachian tube, and thereby to cause any obstruction of this canal.

When the plugs are removed, if the wound is not sufficiently healed, the nostril should be thoroughly irrigated with the sodium chloride and sublimate solution, dried and dusted with iodoform powder, and the antiseptic plugs again inserted. It is not necessary at this time to use plugs that fit so tightly as at the first dressing, since the danger of bleeding has passed. The second plugs can almost always be allowed to remain until the wound is sufficiently healed to require cleansing only, which should be done two or three times a day with an antiseptic wash or spray. In cases in which both nostrils require operations, if they can be dealt with separately, it is best to operate on but one at a time, performing the operation on the second after the first has healed. Thus, by obstructing but one nostril at a time, nasal respiration is maintained as far as possible.

It will be seen that in this method of rendering the nasal passages thoroughly aseptic, I have not employed any new antiseptic or aseptic agents. But this form of dressing for the purpose of hermetically sealing the passages after they have been rendered thoroughly aseptic, has not hitherto been advocated or employed.¹

The advantages of this procedure over the open method of treatment are very great.

1. It effectually prevents hæmorrhage. In certain cases in which extensive operations are performed, not more than a slight oozing of blood from the wounded surface can take place, on account of the firm and uniform pressure which this flat packing exerts. In all cases this method of arresting nasal hæmorrhage is far superior to the old method of plugging the nose posteriorly, or packing it anteriorly with cotton or similar substances.

2. All purulent formation is prevented. Septic

¹ Dr. Kitchen, of New York, has proposed a method of plugging the nose similar to that which I have described (*Medical Record*, January 7, 1888). He does not, however, emphasize the antiseptic uses for which this form of dressing is especially adapted.

absorption cannot take place, and, therefore, constitutional disturbances, except those that are the immediate results of the operation or the effects of the cocaine, are averted.

3. It enables the operator to complete at one sitting all the operative procedures required in one nostril, however extensive, with no subsequent disturbance to the patient greater than that which commonly results from a slight operation when the open method is adopted.

4. The inconvenience of frequently cleansing or irrigating the nostril with an antiseptic solution after the operation is avoided; for this dressing, if properly placed in the nostril, can be allowed to remain from four to six days, or even longer, according to the thoroughness with which the wound and the dressing have been made aseptic.

5. Under this form of dressing the wound heals readily, quickly and smoothly. Granulations are not permitted to spring up, so that when the parts are healed the passage remains free and unobstructed; and when opposite walls of the nostrils are wounded, the liability of those surfaces to grow together, or of fleshy bands to form across the cavity, is entirely prevented.

6. It may be mentioned also that this method of plugging the nose in case of epistaxis is much less likely to cause aural complications than is the ordinary method of plugging the posterior nares.

7. In the dressing of fractures of the nose or operations for correcting deviations of the septum, this form of dressing is superior to any other for the purpose of holding the parts in place; and when applied it is not necessary to replace it or to disturb the wound for a number of days, so that the union of the fractured parts is not interfered with, as is the case with the ordinary methods of holding the parts in place by metallic clamps, hard rubber plugs, and similar devices.

In conclusion I would call attention to the importance of such a form of dressing after the employment of the galvanic cautery. The actual cautery is generally believed to be the best sterilizer, and is often used for searing the surface of wounds after cutting operations in order to prevent hæmorrhage and the absorption of septic material. Gerster says: "The actual cautery is the most effectual sterilizer."¹

This is true so far as it relates to the destruction of the germs with which the cautery comes in direct contact; but it must not be forgotten that a burned mucous surface is the most active absorbent surface, and the most productive of copious purulent formations.

In the case of a simple burn of the skin, if it is

allowed to remain exposed to the atmosphere extensive inflammatory action will set in, owing to the active infection of the surface by germs. On this account it is rare for even slight cauterization of any part to be unattended with swelling and constitutional symptoms far in excess of those which usually attend a cutting operation upon the same region. In the treatment of all burned surfaces, therefore, the most thoroughly aseptic precautions are of the utmost importance.

Looking at this subject from a scientific point of view, when we consider the large number of varieties of benign and of disease-germs which are found in the nasal secretions, and when we consider that the tissues of the nasal passages are the most rapid absorbents of the mucous surfaces of the body, it would seem to be inexcusable to treat a wounded surface in the nose by the open method, and thus to afford a feeding-ground for the numerous bacteria which with every breath are deposited upon this exposed surface.

The form of dressing by means of intra-nasal plugs prepared and applied in the way that has been pointed out, is therefore recommended as a practical mode of dressing intra-nasal wounds, and one which fulfils all the aseptic precautions required in every branch of modern surgery.

ORIGINAL LECTURES.

LUPUS VULGARIS.

A Clinical Lecture

delivered at Freedman's Hospital, Washington, D. C.

BY N. F. GRAHAM, M.D.,

PROFESSOR OF THEORY AND PRACTICE OF SURGERY AND CLINICAL SURGERY, MEDICAL DEPARTMENT, HOWARD UNIVERSITY; CONSULTING SURGEON TO FREEDMAN'S HOSPITAL.

[Reported by E. A. BALLOCH, M.D., Lecturer on Minor Surgery, Medical Department, Howard University.]

GENTLEMEN: The discovery of the bacillus tuberculosis by Professor Koch and his recent utterances in regard to curing or alleviating the diseases caused by this microscopic organism, give renewed interest to every form of tubercular disease.

The hopes of a great multitude of victims of tuberculosis in every form are now hanging upon the results of the various trials of the new remedy which are being made, with more or less accuracy as to detail, both in Europe and in this country.

I take pleasure, therefore, in bringing before you, to-day, three cases of lupus vulgaris, the diagnosis in two of which has been placed beyond question, both by careful microscopic examinations and by the results of Koch's lymph.

All the signs, objective and subjective, which characterize the disease in question, are present in the cases now before you. The history of the development in each case has been obtained by Dr. Balloch, and I will give a brief *résumé* of them:

¹ Antiseptic Surgery, p. 3. New York, 1888.

CASE I. *Lupus exulcerans*.—L. D., colored, male, aged thirty years. First noticed the disease three years ago. Made its appearance as a small pimple. Owing to intense itching the pimple was kept irritated by constant scratching. From this focus the disease spread until it reached its present proportions. It now affects the nose, upper lip, and both cheeks, which are in a state of superficial ulceration, accompanied by a discharge of pus and blood. Glands of neck much enlarged and very hard.

CASE II. *Lupus hypertrophicus*.—L. J., female, colored, aged twenty-five years. States that disease began "when she was a little girl," probably about the age of puberty. Began in the form of one or two small pimples, which would dry up and be followed by others more numerous. Began on nose and caused an ulcer which slowly spread. No pain. Scabs would form and drop off, leaving a raw surface. Always a profuse discharge. After the disease had continued a year or two she received an injury to the face which caused a more rapid spread of the ulceration.

Her appearance now is typical. The nose is enormously swollen and warty. The disease also involves the upper lip and face, causing blindness by reason of patient's inability to open her eyes, owing to swelling. All the parts involved are in a state of active ulceration, and pour out a profuse discharge of pus and blood.

injections have been made by Dr. Wm. M. Gray, of the Army Medical Museum, which is a sufficient guarantee that they have been accurately and scientifically carried out.

Dr. Gray has followed his own methods, and will shortly publish the full details. Suffice it to say that he has used much larger doses than other American experimenters, and his results have been correspondingly better, approaching more nearly those obtained by the German investigators than any I have seen.

The results in two of the cases have been marvellous. The improvement in Case II. is particularly remarkable. You would hardly recognize her as the same person. The huge, warty protuberance, which she formerly called her nose, is gone, and in its place she has a nearly natural nose, covered with soft, velvety, pink skin, without a trace of ulceration or discharge. She can once more see the light of day, and, as you perceive, presents but few evidences of the existence of her former trouble. In Case I. the improvement is not so apparent at first sight, but is none the less real. The discharge has ceased and the parts are covered by dry, brownish scabs. These will soon drop off, leaving healthy skin; in fact, this healthy skin is now visible between the crusts. The cervical glands have lessened in size one-half and are softer and altogether more nor-

FIG. 1.

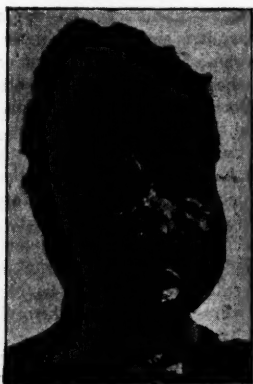
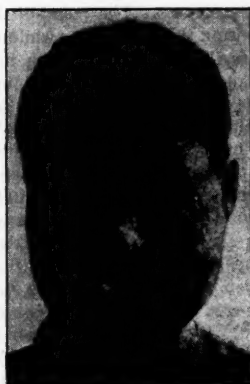


FIG. 2.



CASE III. *Lupus exulcerans* (?).—E. B., female, aged forty years, colored. Duration of disease nine months. First noticed as a small pimple on nose, which was kept irritated by constant scratching, finally resulting in a spreading ulcer. No pain. Always had nasal catarrh, with constant secretion of mucus. Now has superficial ulceration of nose and neighboring parts of both cheeks. Cartilage of nose gone. Discharge of blood and pus.

You will understand that the descriptions apply to the cases as they were before the use of the lymph, and, in order that you may have a good idea of the extent of the disease in each case, I will hand around these photographs, kindly taken for me by Dr. A. H. Lee on the day before the injections were begun.

All these cases have been under treatment by the Koch method. The lymph used was some of that sent personally to Dr. John S. Billings by Prof. Koch, so that there can be no possible doubt as to its purity. The

mal to the touch. In Case III. no material improvement is manifest. The ulceration looks cleaner, brighter, and more healthy, and the discharge has nearly ceased, but this is all we can say. She has never exhibited any decided reaction to the lymph, while the other two cases showed marked reaction, the temperature in Case II. going at one time to 105° F. and remaining there for twenty-four hours.

But it is more of lupus in its clinical aspects that I desire to speak to-day. Lupus is now believed to be one of the forms of cutaneous tuberculosis due to the bacillus tuberculosis. The variety under consideration, and with which at least two of these patients are affected, is known as lupus vulgaris.

It differs from lupus erythematosus in the important fact that the latter affects the skin and subcutaneous cellular tissue only, and never goes on to a stage of softening or ulceration. Also the latter never affects the

deeper tissues, soft or hard, as muscle, tendon, cartilage or bone, while lupus vulgaris in its destructive march is not limited even by bone.

Lupus vulgaris commences with deep-seated points in the skin, from the size of a pin's head to that of a split pea. You will recall that the history of each of these cases shows a beginning as a small pimple. The color varies in accordance with the complexion of the individual. In the white it is orange-red or a shade of brown, and in the dark-skinned races, simply a tint lighter than that of the natural skin.

These points or centres of inflammation are sharply defined from the beginning. At a later period they become elevated above the surface, to form distinct nodules or tubercles. The disease may spread from a focus, peripherally, and so extend until a large patch is formed, or several tubercles may appear in a patch of skin which, in time, run together to form sores of varying sizes. Case II. illustrates this mode of spreading. The extent of involvement of the skin and deeper tissues gives rise to a number of clinical varieties of lupus vulgaris, such as lupus maculosus, lupus exulcerans, lupus serpiginosus, lupus exfoliatus, lupus hypertrophicus, and so on, as long as the adjectives hold out. Time will not permit of a consideration of all these varieties, so we will confine our attention to the cases before us.

Cases I. and III. I had formerly considered to be cases of lupus exulcerans. The result of the injections in Case I. confirms this diagnosis, while it renders it doubtful in Case III. To the eye both had the same general appearance. In this variety of lupus vulgaris there is evidence of cicatrization under the skin at points, the result of infiltration of the subcutaneous tissue by the disease. At other points, by reason of the intensity of action as well as on account of the irritation to which the surface is necessarily subjected, you will find necrosis of the skin and a destruction of deeper tissues, not even sparing cartilage. This is what I had thought to be going on in Case III.

Ulceration soon takes place, and the surface of the ulcer will be covered by yellow and brown crusts, which show a secretion. I wipe off the secretion in Case III., and the granulations are plainly seen. As a rule, in cases of lupus the granulations are soft and friable, so that they are easily scraped away with the nail or curette. We have here an ulcer which has slowly progressed, destroying the deeper structures until the end of the nose is nearly gone. The granulation-tissue found in this disease is different from that found in healthy, constructive inflammation, in that it is liable to, and generally does proceed to, destructive ulceration, and not, step by step, to repair, as is the case in healthy sores.

Case II. presents the variety of lupus vulgaris clinically known as lupus hypertrophicus. In this form of the manifestations of lupus, the products of inflammation thrown into the connective tissue at the base of the nodules or tubercles overbalance the process of necrosis on the surface, and large and prominent granulations are heaped up in masses.

These masses are sometimes covered over with a thin skin and remain as warty-looking growths; whilst in other, and by far the larger number of cases, they

remain soft and fungous, easily broken down and bleed at the least touch. The nodules, even when hard to the touch, are very friable, and can be penetrated by an ordinary probe or scraped out of their beds by the lightest touch of the curette, leaving well-defined excavations with normally solid margins and bases of sound tissue, or, more likely, tissue infiltrated with the products of inflammation. This, in itself, is a crude factor in making a diagnosis in a case of lupus.

The disease may occur in any part of the body, but has a decided preference for the face first, and next the extremities. In each of our cases it happens that the face is the part involved. As a general rule, the extent of surface involved is not large, varying from a patch the size of a dime to one, two, or three inches in diameter. Exceptionally a large surface may be affected, even to the whole side of the face or the entire thigh. Case II. is one of these exceptional cases.

The first signs of lupus manifest themselves early in life, from the third to the tenth year as a rule. The beginning, however, is generally so insignificant that it often escapes observation until about the age of puberty, or later, when new and increased action becomes manifest and the disease spreads, though slowly, with great persistence. This factor has been made use of as a means of diagnosis.

Until the discovery of the bacillus tuberculosis, the etiology of lupus was a matter of speculation, but it is now generally believed and accepted by pathologists, as I have stated, that it is simply tuberculosis of the skin, induced by the same bacilli found in tubercle in other portions of the body. The best and surest means of diagnosis, therefore, is in the examination of a portion of the suspected tissue by the microscope, when, if bacilli are found, the fact that the disease is lupus may be accepted. The bacilli are found in little pockets beneath the connective tissue, and in examining tissue one must, therefore, go rather deeply into the ulcer to get a proper specimen. Comparatively few professional men are supplied with the means of making this diagnostic test, and still fewer have the leisure; so, as a result, the majority must depend upon the ordinary clinical signs presented by the disease.

Lupus is of interest from a surgical point of view, for the reason that it is often mistaken for other diseases. It may be confounded with certain late manifestations of syphilis (tubercular syphiloderma), with epithelioma, with eczema, or with psoriasis. From syphilis it is differentiated by the fact of its very early appearance and of the area involved, as compared with the hereditary manifestations of syphilis. In lupus the ulceration is, as a rule, limited to one region, is comparatively superficial, has a slight and not offensive discharge. The margins of the ulcer are not well defined, it develops slowly, is covered with scales, and in the early stages, from the chronic nature of the malady, there are no constitutional symptoms.

In syphilis the ulcers are deep, with sharply-defined borders, attended by an abundant and foul discharge; they develop rapidly, and are often found on many parts of the body at the same time. Frequently, also, there is suppuration of glands and disease of bones. This, with the history of the initial lesion, which is usually obtainable, in connection with the speedy benefit obtained

from treatment by the iodine preparations and mercury, makes the diagnosis of syphilis quite conclusive.

The differential diagnosis between lupus and epithelioma is somewhat easier. Lupus is generally found in young persons; is not painful; is slow in its progress; without marked ulceration, and usually affects the skin of the face. Epithelioma is more commonly found in the old or middle-aged; is very painful; grows rapidly (as compared with lupus), with marked, circumscribed induration, and forms a deep, discharging ulcer.

Eczema may be diagnosed by the fact that it never proceeds to true ulceration; that it is hard and firm, and cannot be penetrated by the probe nor scraped out of its bed, like lupus. Eczema spreads to neighboring parts peripherally, by a uniform inflammatory infiltration; it is liable to fissure and crack, and there is burning heat, with itching and pain.

In making the diagnosis between lupus and psoriasis you will remember that in the latter, we have the bright red patch, profusely covered with pearly scales, the removal of which shows numerous small blood-points. There is, too, a more general distribution of psoriasis over the body, and it is more liable to attack the extensor surfaces of the limbs.

In the matter of treatment, nothing could better show the uncertainty of the effect of drugs on this disease than the great number that have been recommended and tried; a few with benefit, but the greater number without any effect. I have always placed some reliance upon the internal administration of arsenic in the form of Fowler's solution, beginning with five drops three times a day, and increasing until ten, or even fifteen, drops are taken three times daily. I continue this treatment a long time, going back, at stated intervals of four or five weeks, to the minimum dose, and again increasing as before.

Cod-liver oil does good, and it is best given in the form of an emulsion, of which there are a number of most palatable ones on the market.

Suitable and sufficiently nourishing food should be allowed the patient, and his body should be kept warm and dry.

As to topical remedies for the cure of lupus I have but small faith in any of them. If the part affected be small, its complete destruction by caustics might be followed by good results. When practicable, removal by the knife is easy and the method most tempting to the surgeon. When thoroughly extirpated in this way the results are very good, although there is a liability to return sooner or later.

Another method is by linear scarification, which has for its object the division, in all directions, of the vessels, and, in this way, the starvation of the lupus by cutting off its blood-supply. Inflammation is also excited in the sound tissue, causing the separation of the necrosed tissue, and leaving a healthy sore, which will heal up in the ordinary way.

Of course, if the lymph treatment is capable of accomplishing all that we hope, and if it will effect a cure in all, or a majority, of the cases of this disease, the matter of the treatment of lupus will become easy, and no other methods, such as those I have spoken of, will, in the future, be required.

In the cases before you, the results, so far, are most

encouraging. The only question is as to the permanence of the cure.

However, gentleman, even if the lymph treatment should be successful, many of you will, doubtless, practise your profession in localities where its benefits may not be obtainable. It is in view of this that I have been particular in describing other modes of diagnosis and treatment, upon which you will probably have mainly to rely.

PERSISTENT PAIN AFTER LAPAROTOMY.

*A Clinical Lecture,
delivered at the New York Polyclinic.*

BY HENRY C. COE, M.D.,
PROFESSOR OF GYNECOLOGY.

GENTLEMEN: These two patients belong under the same category and are of peculiar interest to me as illustrating a point on which I have laid considerable stress.

CASE I.—This young woman states that she was operated upon over a year ago on account of severe dysmenorrhœa. She did not leave her bed for seven weeks, which fact, together with the appearance of the cicatrix of the abdominal wound, would seem to show that her recovery was retarded by some complication, of which she is unable to give any clear account. She only knows that she has not menstruated since the operation and that instead of the periodical pain which she suffered before, she has now a constant pain in the lower part of the abdomen, associated with obstinate constipation and colicky pains in the bowels. The patient is positive that the pains are worse than they were before the operation. She is naturally hyperæsthetic, but I can find no particularly sensitive spot around the uterus, which is small, anteverted, and fairly movable. No painful indurations can be felt in the usual location at the uterine cornua. Pressure above the symphysis causes considerable pain. Taking into consideration the history of the case, together with the negative results of the examination, I infer that the patient had localized peritonitis after the operation, which resulted in the formation of intestinal adhesions which hinder and render painful the peristaltic movements. Due allowance must be made for the neurotic element.

CASE II.—This patient I have had under observation since her operation, nearly three years ago. During that period she has not menstruated, but has rarely been free from an intense congestive headache, which has made her life miserable. I was unable to relieve her, but she is now somewhat better, though still far from well. Her ovaries and tubes were removed for the relief of dysmenorrhœa, though they were not much diseased. Her convalescence was uninterrupted. For many months she suffered from pelvic pains, and you see, when I make pressure, that the uterus and its surroundings are still quite sensitive to the touch.

These cases, and a similar one which you saw at the last lecture, are worthy of your careful consideration, as they show the possible after-effects of laparotomy of which you should not lose sight. As a rule, you only witness the operation, and are impressed with its brilliant and successful performance by the skilful operator. You probably seldom think of the subsequent history of

the patient; if you hear from her at all, you merely learn that she made a good recovery and was discharged "cured" at the end of four or five weeks. Now, this is the least important part of the history, as you will find when you come to operate on private patients. Be careful that you do not promise too much. I refer, of course, to cases in which you expect to remove the moderately diseased adnexa for the relief of pain. It is remarkable what a change has taken place in our views during the past four or five years. Now the removal of tubes and ovaries not seriously diseased is regarded as rarely justifiable; not one empirical operation is now done where twenty were performed a few years back. But even when laparotomy is clearly indicated and is skillfully performed, where no complications are present and the convalescence is normal and without elevation of temperature, there still remain a certain proportion of cases (by no means insignificant) in which it is a question if the remedy is not worse than the original disease. Such patients are afflicted with persistent pains in the pelvis, metrorrhagia, cerebral congestion, vesical irritation, and various neuroses, which are either extremely difficult or quite impossible to relieve. I need only call your attention to the cases which you see here one, two, or three years after operation to assure you that this picture is not an imaginary one. Last winter I operated upon two patients before the class in the same afternoon. Both were young women upon whom abdominal section had been performed by prominent surgeons a year or more before, followed by normal convalescence, and yet both had such severe and persistent pains that a secondary laparotomy was necessary in view of the absence of relief from palliative treatment. In one case, in which both ovaries and tubes had been removed, the pain was due to a firm intestinal adhesion, which was separated. The patient was much relieved and has since married. In the other case only one ovary and tube had been extirpated for the relief of pain which continued after this operation. I removed a pyosalpinx and small ovarian cyst, and broke up some pelvic adhesions. This patient has not only failed to be relieved, but in addition suffers from profuse metrorrhagia at irregular intervals, as well as constant severe pain at the site of the stump which I left. The latter is enlarged and is extremely sensitive. I examined her under ether a few weeks ago, having previously introduced tents, explored the uterine cavity thoroughly and removed a few "fungosities," but all to no purpose; she continues to suffer and to flow as before. Two other patients (perfectly simple cases) operated upon last winter, who have been kept under constant observation, give a precisely similar history. We do not understand why these phenomena occur; but they prove most forcibly that removal of the adnexa does not always cause a sudden and miraculous disappearance of the symptoms for the relief of which the laparotomy was performed.

Now, I trust that you will understand my reasons in calling your attention to the subsequent history of these cases. It is not with any desire of belittling the results of abdominal surgery. We have every reason to feel proud of the work of American laparotomists, and of the conscientious way in which it is done. Only extremists pretend to cure advanced disease of the ovaries and tubes without resort to the knife. What I wish you

to remember is that while life may be saved, absolute recovery from pain, which is the chief desideratum to the patient, can never be positively guaranteed by the surgeon, nor can he promise that the disturbances incident to the sudden establishment of the menopause may not be profound and lasting. It is only by keeping our patients under careful observation for years, not weeks or months, after the operation, that we can arrive at any scientific estimate of the value of laparotomy as a curative measure.

MEDICAL PROGRESS.

Liniments for Pruritus.—*La Semaine Médical* gives the following liniments for pruritus:

R.—Pure resorcin 1 drachm.
Glycerin 2 drachms.
Water 4 ounces.

Mix and label "To be Used Externally;" or,

R.—Menthol 3 drachms.
Glycerin 2 drachms.
Water 4 ounces.—M.

This is to be labelled "Use Externally," and is to be shaken before using.

Finally, the following mixture may prove of value:

R.—Ichthyol 1 to 3 drachms.
Glycerin 2 drachms.
Alcohol } of each 2 ounces.—M.
Water }

Use externally.

Trinitrine for Angina Pectoris.—Trinitrine or nitroglycerin has been very largely used, particularly in France, in the treatment of angina pectoris, and is without doubt a valuable remedy for this disease. According to the studies of HUCHARD, POTAIE, and HERARD, who have studied its physiological action particularly in relation to its use in angina pectoris, the drug is a vaso-dilator resembling very closely nitrite of amyl. BOCQUILLON uses it in the following manner:

R.—Alcoholic solution of trinitrine
(1 per cent.) 30 drops.
Distilled water 10 ounces.—M.

Two teaspoonfuls morning, noon, and night.

For subcutaneous injection he uses the following solution:

R.—Alcoholic solution of trinitrine
(1 per cent.) 30 drops.
Cherry-laurel water 3 ounces.—M.

Twenty minims of this may be given hypodermically.

Salt Solution in Acute Anæmia and Cholera Infantum.—In the *Archives of Pediatrics* for March, 1891, the following translation is to be found: A six-tenths of one per cent. solution of salt was first used in four cases of cholera infantum, two dying and two recovering. To the solution was added a little alcohol. The solution was sterilized, and kept at a temperature of from 39° to 40° C. The apparatus used was a glass funnel with a

rubber tube, about three feet long, to which a cock was attached, the end of which fitted into the canula connected with a small trocar. In place of the foregoing, one may use for children a small syringe, holding about five drachms, to which a long aspirating needle may be attached. The transfusion was made into the skin of the abdominal wall, and absorption was assisted by massage over the point of injection. For infants, from 1 to 2 ounces is a sufficient quantity for injection, and it could be repeated if collapse rendered it necessary. No unpleasant phenomena are likely to accompany the injections. After the operation the head should be lowered, the feet raised, elastic bandages wrapped around the child, and other excitants used as occasion calls for them. The same treatment may be used in collapse following extensive hæmorrhage, either in children or adults.

Treatment of Eczema in Children.—In the *Revue Mensuelle des Malades de l'Enfance* for August, 1890, SALLFELD gives the following treatment for eczema: Some interesting considerations are presented concerning the treatment of eczema in children, which differ essentially from those which are usually adopted in adults. Of all varieties of local eczema which are developed under the influence of external causes, the most important in children, in the author's opinion, is intertrigo. It is particularly common in fat children, and is frequently located near the margin of the anus, in the inguinal folds, in the folds of the neck, and in the vicinity of the chin. Intertrigo thus localized is readily cured by the use of bland and inert powders, but if the disease includes large portions of the surface of the body, the local treatment should be supplemented by change in the diet, and if diarrhœa exists, it should be energetically treated as well. If the skin is the seat of an intense inflammation, cold compresses should be used for several days which have been moistened with a mixture composed of equal parts of a five-per-cent. solution of boric acid and the officinal solution of subacetate of lead, an ointment of boric acid being used after the former preparation has been discontinued. If the skin is very moist it should be dried with a suitable absorbent powder before using the ointment. In the treatment of eczema of the face and scalp which is so common in fat children, it is well to diminish the quantity of nourishment, to eliminate fatty materials from the diet, and to combat habitual constipation with appropriate enemata. The crusts upon the head and face should first be softened with olive oil, and after they have been removed the surface should be anointed with the following ointment:

R.—Boric acid	45 grains.
Zinc oxide	75 "
Vaseline } of each	450 " —M.
Starch }	

If there is generalized eczema of a scrofulous character, the organs of digestion must be carefully interrogated, and if the alimentation is insufficient, it must be supplemented with cod-liver oil combined with phosphorus or arsenic. The local treatment should be limited to the use of vaseline inunctions, followed by the use of bland powders upon the skin. Applications of tar prepara-

tions should be avoided, as they only irritate the skin. The following formula may be used with advantage:

R.—Ammoniated mercury	30 grains.
Peruvian balsam	75 "
"Wilson's ointment"	450 " —M.

—*Archives of Pædiatrics*, March, 1891.

Cremasteric Reflexes in Chloroform Anæsthesia.—An excellent test for surgical anæsthesia by chloroform exists in the cremasteric reflex. When it is lost sensation has disappeared.

The Dose of Salol for Infants.—*Lyon Médical* states that the proper dose of salol for a child of six months is 3 grains, for one of two years 6 grains, and for one of five years 15 grains. [These doses are certainly as large as they should be.—ED.]

The Action of Saccharine on the Heart.—LOUTZENSKO has studied the action of saccharine upon the heart of the frog, and finds that when $1\frac{1}{2}$ grains of a two-per-cent. solution of saccharine with bicarbonate of sodium is injected into a frog the animal in one hour appears to be better. It is insensible to the touch, but pinchings provoke feeble reflexes. The heart is finally arrested in diastole, but if pinched will once more begin to contract. Electrical stimulation also produces these contractions of the heart. In doses twice or thrice as large as that named, Loutzensko found that saccharine causes irregular cardiac movements. The effect of the drug upon the vagus nerve after such doses is very feeble.—*Revue Général de Clinique et de Thérapeutique*.

Treatment of Seat-worms.—Success in the treatment of cases of seat-worms depends upon the prolonged and constant use of a vermifuge or some active vermicide. The worms are generally attacked by means of injections, suppositories, or ointments. Of the injections, a favorite prescription is a solution of common salt in the proportion of 1 to 5. Sometimes sugar and water may be used, and an infusion of absinthium is employed by some French practitioners. Still others employ simply cold water. It is said that West and Barthez recommended astringent injections composed of the perchloride of iron and lime-water, as follows:

R.—Lime-water	6 ounces.
Perchloride of iron	10 drops.—M.

And also,

R.—Lime-water	4 ounces.
Decoction of marshmallow	1 ounce.—M.

For the same purpose Trousseau prescribed suppositories of tannin, made up as follows:

R.—Tannic acid	15 grains.
Cocoa butter	1 drachm.—M.

Other physicians have employed injections of asa-fœtida, and many have found the following treatment useful:

R.—Alcoholic extract of senna leaves	30 grains.
Boiling water	4 ounces.

Make an infusion and sweeten with syrup of wild cherry, 4 drachms. This may be given to an infant

of four or five years as a laxative, and if it does not act may be followed by from a half to one drachm of the sulphate of magnesium. After this an injection may be given composed of 1 ounce of powdered quassia chips to 1 pint of water, or of carbolic acid in the proportion of from $\frac{1}{2}$ to 1 drop to 4 ounces of water. An emulsion of calomel may be employed composed of calomel 3 grains and mucilage of flaxseed 4 ounces.

GUERSANT is said to employ sulphuretted potash $2\frac{1}{2}$ drachms, water 4 ounces; while ROSSBACH finds naphthaline of great service, and administers it as an injection as follows:

R.—Naphthaline 15 grains.
Olive oil $1\frac{1}{2}$ ounces.

This quantity may be doubled or tripled in adults. Sometimes he prefers to use naphthaline from 2 to 10 grains and decoction of marshmallow 6 ounces. If the worms inhabit the lowest portion of the intestine it may be well to follow the treatment of Cruveilhier, viz.—to employ mercurial ointment or to rub into the anus an ointment composed of calomel 8 grains and cocoa butter 1 drachm.

TROSSEAU is said to employ the following suppositories:

R.—Calomel 1 drachm.
Vaseline 3 drachms.

When the worms inhabit the higher portions of the rectum they will probably resist all therapeutic measures unless they be attacked through the stomach. Under these circumstances it may be well to employ calomel and santonin, of each $\frac{1}{2}$ grain, which is to be administered early in the morning in order that the calomel may act by evening. This dose is the proper one for a child of two to three years.—*Revue Général de Clinique et de Thérapeutique*.

Pill for Tuberculosis.—According to *L'Union Médical* CHAUVIN uses the following pill in tuberculosis:

R.—Iodoform $\frac{1}{2}$ grain.
Dover's powder $1\frac{1}{2}$ grains.
Extract of gentian enough to make a pill.

Give one pill three times a day immediately after meals.

Cholagogue Powders for Hepatic Colic.—In the *Revue Général de Clinique et de Thérapeutique* the following treatment for the relief of hepatic lithiasis is given, based upon the fact that BINET and others have found that the benzoate and salicylate of sodium act as cholagogues. The nux vomica in the prescription aids in regulating the bowels and in relieving anorexia and dyspepsia.

R.—Benzoate of sodium } of each . 75 grains
Salicylate of sodium }
Powdered nux vomica 7 " —M.

This is to be divided into 20 powders, of which the patient should take 1 three times a day for two months.

Treatment of Typhoid Fever.—The *Revue Général de Clinique et de Thérapeutique* gives the following method used by TEISSIER in the treatment of typhoid fever.

Morning and night a powder composed of 5 grains of alpha-naphthol and 3 grains of salicylate of bismuth is given. In addition four cold injections are used, at intervals of twenty-four hours, with the object of increasing diuresis. After the midday injection he prescribes the following tonic and antipyretic mixture:

R.—Extract of cinchona 1 drachm.
Sulphate of quinine 15 grains.
Tincture of valerian 1 ounce.—M.

Teaspoonful at a dose.

Teissier also applies cold compresses to the head and abdomen, and the patient is allowed 10 ounces of Bordeaux wine and one and a half pints of milk or broth in the twenty-four hours. He employs alpha-naphthol in preference to beta-naphthol because the latter is very much more poisonous; thus, to produce poisoning in a man of ordinary weight it is necessary that twice as much alpha-naphthol be given as of beta-naphthol. In consequence it is possible to give larger doses of alpha-naphthol without danger, and obtain thereby a greater degree of intestinal antiseptics. The cold baths which he recommends augment, in his opinion, the elimination of toxic substances in the urine, and the naphthol stops their production in the intestine.

The Employment of Kola Nut.—HUCHARD gives the following prescription in the *Revue Général de Clinique et de Thérapeutique* for the administration of kola nut:

R.—Tincture of kola 1 ounce.
Tincture of coca 1 "
Tincture of squills $\frac{1}{2}$ "
Tincture of digitalis 2 drachms.
Simple syrup $2\frac{1}{2}$ ounces.
Red wine 1 pint.—M.

Allow the sediment to settle, and then decant and filter. Two or three teaspoonfuls of this mixture may be given each day for eight or ten days in cases of cardiac disease requiring tonics. In other cases the following may be employed:

R.—Fluid extract of kola } of each 6 drachms.—M.
Fluid extract of coca }

A small teaspoonful should be taken after luncheon, with a little simple syrup or Malaga wine. This mixture should not be given at night, because the kola produces insomnia in some patients. The dose of it should be from 20 to 30 drops three times a day: as, for example, at 8 o'clock in the morning, at midday, and at 4 o'clock in the afternoon.

Treatment of Seborrhœa of the Scalp.—LIEBREICH employs the following prescription in the treatment of seborrhœa of the scalp:

R.—Spirits of ether $1\frac{1}{2}$ ounces.
Tincture of benzoin 1 drachm.
Vanillin $\frac{1}{2}$ grain.
Heliotropin 3 grains.
Oil of geranium 2 drops.

Mark "For external use, combustible."—*Wiener medicische Presse*.

CURRENT LITERATURE.

SATURDAY, MARCH 28, 1891.

NATURE AND PATHOGENY OF MUSCULAR ATROPHIES FOLLOWING LESIONS OF THE ARTICULATIONS.

DUPLAY and CAZIN, in a paper upon this subject (*Archives Générales de Médecine*, January, 1891), mention some of the numerous theories which have been proposed from time to time to explain the pathogeny of muscular atrophies consecutive to articular lesions, and which have, to-day, been very properly abandoned. Among these they recall the mechanical theory of Roux, in which the atrophy is explained by a mechanical distention of the synovial membrane by a serous effusion, but which does not hold good in cases of atrophy occurring independently of intra-articular effusion; the theory of functional inactivity, which has also been controverted by numerous instances of atrophy occurring with no immobilization of the joint; the theory of the propagation to the muscles of the articular inflammation, which will not apply to amyotrophies developed at a distance from the joint, or generalized in an entire member, nor does it take into consideration the rapidity with which these atrophies may appear; and, finally, the reflex vaso-dilator theory of Schiff, and the reflex vaso-constrictor theory of Brown-Séquard. While the general theory of to-day inclines toward the opinion of Vulpian, it is worth while, nevertheless, to make special mention of a theory conceived by Sabourin, and developed by several writers, more especially by Descosse (*Thèse de Paris*, 1880). According to this theory, which may be designated as the neurotic theory, the inflammation of the peri-articular fibrous tissues is propagated to the fibrous envelope of the muscular fasciculi, and from them to the neurilemma of the final nerve ramifications, from which the nervous element itself becomes altered. This theory, however plausible, has not been confirmed by any histological examination, and in the presence of the inadequateness of these various theories, the consensus of opinion remains with the reflex theory of Vulpian. This theory will suffice to explain the rapidity with which the atrophy frequently appears, and is in accord with the results of clinical observation. It is also supported by microscopical examinations of the muscles, which always present the characteristics of a simple atrophy. Nevertheless, for this theory to be definitely adopted, it is necessary that careful and sufficiently numerous experiments be made to establish positively the condition of the cord and of the nerves in these amyotrophies of articular origin. In most of the cases observed hitherto no appreciable lesion of the cord could be discovered, but M. KLIPPEL (*Bulletin de la Société Anatomique*, November, 1887, and January, 1888) reported to the Anatomical Society a case of chronic arthritis of the right knee with degenerative atrophy of the crural triceps, in which there were

some alterations in the cells of the anterior and posterior horns of the cord of a granulo-fatty nature. Professor Charcot was, therefore, led to the opinion that there may be two degrees of the articular amyotrophies: the one, in which the spinal affection is purely dynamical, and expresses itself by a simple atrophy of the muscular fibres; the other, more grave, in which the spinal affection is characterized by appreciable organic lesions, and expresses itself in the muscles by degenerative lesions.

Duplay and Cazin have performed a number of experiments upon dogs and rabbits, in which they produced an inflammation of the joint by means of injections of tincture of iodine, of solutions of silver nitrate, by the thermo-cautery, or by violent torsion, tearing the lateral ligaments. In every instance there were pronounced evidences of atrophy, as shown both by mensuration and weighing. The histological examinations of the muscles constantly revealed the characteristics of simple atrophy without any appearance of granular degeneration of the striæ. The substance of the spinal cord was found to be intact in every portion, as were also the spinal roots. In no case were the observers able to note any appreciable change, either in the size of the anterior horns, or in the number or size of the nerve-cells, or in their form. The only lesions which they were able to prove were found in the articular nerve filaments, which were the seat of an inflammation extending from the peri-articular tissues. They have drawn the following conclusions:

1. Amyotrophies secondary to lesions of the articulations consist in a simple atrophy of the muscles, as has already been indicated by most of the writers upon the subject.

2. This atrophy cannot be explained by a dynamic action resulting from a simple reflex due to an irritation of the terminal filaments of the articular nerves.

3. This pathogeny, clearly indicated by Vulpian, and accepted by a large number of writers, has never received, up to the present time, an absolutely rigid anatomo-pathological demonstration. The constantly negative results of their researches relative to the existence of lesions of the nerve-trunks, of the spinal roots, and of the cord, seem to the authors to constitute a definitive demonstration.

THE VARIETIES OF HYDROCELE.

DUPLAY mentions a large variety of hydroceles which may be encountered in the inguino-scrotal region, together with the means of differentiating them. It is an easy matter to distinguish the so-called "hydrocele by infiltration" from hydrocele with effusion, since the former is simply an œdema, and is not accompanied with fluctuation and transparency, while the tissues retain the imprint of the fingers. More difficult is the diagnosis between encysted hydrocele of the testicle and epididymis and vaginal hydrocele. The differences here consist in the variable connections which exist between the sac and the testicle. The effusion in hydrocele of the tunica vaginalis entirely surrounds the testicle, and the latter occupies a postero-

inferior position, and is a little internal to the tumor. This is the rule, but it is well to remember that in cases of inversion of the epididymis the testicle is found in front of the effusion. In encysted hydrocele there is a cyst which takes its origin between the testicle and the epididymis, either on a level with the head of the latter, or a little lower. This cyst increases in volume, little by little, until it conceals the testicle, but it always remains attached to the head of the epididymis by a point more or less constricted, as large as the thumb or two thumbs, and it is always possible to outline the gland, which is impossible when it is enveloped by an effusion.

It is necessary to distinguish several varieties of vaginal hydrocele, and to describe separately congenital hydrocele, and hydrocele in Dupuytren's pouch. In the foetus there is nothing in the tunica vaginalis, and it is at the time of the descent of the testicle that a prolongation of the peritoneum is dragged down, constituting the serous cavity. Congenital hydrocele is that in which the peritoneo-vaginal prolongation is not separated from the large abdominal cavity. The liquid which the sac holds is then very easily reducible, and returns into the abdomen very rapidly when the passage is large. If, on the contrary, the passage is small, it may require some time to return all of the fluid. Hydrocele in Dupuytren's pouch is a second variety of congenital hydrocele. It is easy to confound this variety with bilobar hydrocele. The latter is that in which, owing to the resistance of the fibrous tunic of the pouch, a bridle is formed which divides the sac into two portions. Hydrocele in the pouch is a variety in which the peritoneo-vaginal conduit, instead of becoming obliterated after the passage of the cord, is closed only in its upper portion, this closure completely shutting off communication with the peritoneal cavity. If, under these circumstances, an effusion occurs into the tunica vaginalis, it will divide into two portions, the one occupying the cavity which extends from the base of the sac to the orifice of the canal, and the other an intra-canalicular dilatation. Occasionally the peritoneum is pushed back, and it then forms a subperitoneal sac, which may be felt in the iliac fossa. In some cases, vaginal hydrocele runs even to the external orifice of the vaginal canal.

Of hydrocele of the cord there are two varieties: in one, the cavity presents itself above the line of the cord, and evidently consists of the non-obliterated remains of the peritoneo-vaginal canal. It is seen as a small, resistant, transparent tumor, at a point more or less elevated above the passage-way of the cord. Some cysts of this kind at times descend to the lower portion of the pouch, and it is then possible to confuse them with ordinary hydrocele. On the other hand, the obliteration of the peritoneo-vaginal canal may take place in its lower portion, all the upper portion remaining patulous, and forming a serous cavity which may be taken for an hernia or an effusion. In this variety, which is very rare, the effusion descends along the inguinal canal, and forms a transparent, reducible tumor. This is, if we adopt the name given by Chassaignac, a peritoneo-funicular hydrocele.

Finally, there is hydrocele of the hernial sac, which may extend the length of the inguinal canal, and even reach to the base of the pouch. The hydrocele is a serous cavity filled with liquid; sometimes the intestine and omentum are absent, and there is no communication with the peritoneum, but at other times an organ is found in the sac which should be in the abdominal cavity. Hydrocele of the hernial sac does not descend to the base of the scrotum, and it is easy to recognize it. Nevertheless, the diagnosis between it and peritoneo-funicular hydrocele, or cysts of the cord, may be quite difficult.—*L'Union Médicale*, January 1, 1891.

HYDRASTIS CANADENSIS IN UTERINE HÆMORRHAGES.

JULES BATAUD refers to the paper by Schatz, and to the recent theses by Cabanès and Pigache, which contain a *résumé* of the recent literature upon hydrastis. Bataud himself has studied the effects of hydrastis in four cases of uterine hæmorrhage which occurred in the wards of the Saint-Lazare.

The first case was that of a prostitute, twenty-seven years old, with secondary syphilis, who was unexpectedly arrested while street-walking, and was taken to Saint-Lazare. She was of a very nervous and impressionable temperament. Menstruation was regular, scanty, and accompanied with dysmenorrhœa. The patient had never had a child or a miscarriage, and, though she had been at the hospital a dozen times before, had never had uterine hæmorrhage. At the time of admission it was found that she had an enormous papulo-hypertrophic syphilide of the vulva and anus. On the night of admission she was seized with profuse hæmorrhage from the uterus, preceded by dysmenorrhœal pains, though she had menstruated only fifteen days before. The cause of the hæmorrhage was thought to be congestion of the ovaries and uterus, induced by the shock of her sudden arrest—such an effect is said not to be uncommon in patients brought to Saint-Lazare. An examination of the uterus and ovaries showed no cause for the hæmorrhage. The patient was given ten drops of fluid extract of hydrastis thrice daily, and the hæmorrhage ceased nine days after its first appearance. It is not clear from the text whether she took the hydrastis from the beginning of the hæmorrhage or not. The drug was continued for twelve days after the hæmorrhage had ceased. The following menstrual period continued only three days, and the flow was scanty as usual.

The second patient, a woman, twenty-one years old, was admitted for gonorrhœal urethritis and vaginitis, with discrete vegetations about the anus and vulva. Menstruation was regular and painless, lasting four or five days. She had had neither children nor miscarriages. While descending the stairs, one day after admission, she fell, striking her side over the region of the kidney. Two hours later she was seized with acute pain, and was obliged to go to bed. The same night very profuse and painful hæmorrhage from the uterus came on. There was a large ecchymosis in the left lumbar region. Forty drops of fluid extract of hydrastis were given

daily, in four doses. The next day pain and hæmorrhage were less, and in five days from the beginning of the administration of hydrastis, and in six from the time of the accident, the hæmorrhage had ceased.

In the third case, a woman, twenty-three years old, was admitted for syphilitic erosions of the mouth. Her menstruation had always been regular, scanty, and painless, lasting four or five days. She had had neither children nor miscarriages, and had never had menorrhagia or pain in the abdomen until three months before admission, when she rolled down stairs. This accident was followed by a sensation of heat and weight in her abdomen. Two days later menstruation set in, and was painful and much more profuse than normal, and continued ten days. In the interval between her menses the pains continued, and leucorrhœa developed. The last menstruation before admission was similar to the one just described. The uterus, vagina, and vulva were intensely congested. The dull curette disclosed no lesion of the endometrium. At the next menstruation the patient was kept in bed, and was given forty drops of fluid extract of hydrastis a day, beginning on the second day after the appearance of the flow. Menstruation lasted only seven days, and was less painful. The hydrastis was continued until the next menstruation appeared, which was not painful, lasting only five days, and was not as profuse as before. The congestion of the uterus is said to have been completely cured.

In the fourth case, a woman, thirty-nine years old, had been curetted eight months before for metrorrhagia due to an endometritis following abortion. The patient was cured by the operation, and menstruation became normal as to quantity and duration. On the second day of one of her menstrual periods, she had intercourse with her husband. Instead of the flow ceasing on the fourth day as usual, it continued for eight days longer, the patient suffering at the same time from sensations of heat in the pelvic organs. Bataud saw the patient on the tenth day of the hæmorrhage, and gave her four one-grain pills of hydrastis a day. The sensations of heat and the hæmorrhage diminished from the first, and ceased on the second day. Since then she has had two periods, each lasting only four days. Absence of endometritis was proved by curetting the womb. Hydrastis was used instead of the fluid extract of hydrastis, because of the disagreeable taste of the latter.—*Revue Médico-Chirurgicale des Maladies des Femmes*, Jan. 25, 1891.

TACHYCARDIA.

At a meeting of the Society of Internal Medicine of Berlin, January 19, 1891, Fraentzel spoke upon tachycardia. Since the first publications upon this disease the number of communications on the subject has increased from year to year. But a mistake has crept in. The habitual acceleration of the pulse which is present in the most diverse diseases of the heart, and which persists without recognizable change for years, should not be called tachycardia; this name should be reserved for the paroxysmal

acceleration of the pulse—the essential paroxysmal tachycardia of the French, in which the disease occurs suddenly, and the pulse increases to 180 or 200 beats per minute.

The symptoms of tachycardia may be explained in two ways, as the result of palsy of the vagus, or from irritation of the accelerator fibres of the sympathetic. The latter cause is more easily understood, the symptom occurring as a spasm, or neuralgia, or a colic occurs. Although from the very beginning the tendency has been to attribute tachycardia rather to a palsy of the vagus than to a stimulation of the sympathetic, yet there are individual symptoms inexplicable by that hypothesis; for example the attack ceases if a blow is struck upon the thorax, and the paroxysm begins with pallor and dilatation of the pupils and subsides with such symptoms as sweating, flushing, and contraction of the pupils.

Excitement of the sympathetic is often cured by a dose of morphine, while in palsy of the vagus digitalis acts very well, or the attack may be cut short by compression of this nerve. Recovery, however, does not always occur so quickly; frequently the disease lasts for years, and then ceases suddenly.

The lack of a clear understanding of the cause makes the treatment uncertain. One should not, however, following Nothnagel, discard all treatment, on the ground that the attacks are not serious and that the disease will subside of itself. Fraentzel, for example, has seen several grave cases, in one of which there was extensive stasis in the lungs and veins, with cyanosis, orthopnoea, catarrh of the lungs, and swelling of the liver. Morphine was of no use in this case, but digitalis overcame the condition. The severity of the symptoms at that time convinced Fraentzel that the disease might result fatally, and since then he has discovered two fatal cases in the literature of the subject, and has subsequently seen one himself. His own case was that of a workman, thirty-five years old, who complained of dyspnoea, which occurred suddenly; he had formerly had cardiac palpitation. The heart was not enlarged, and its sounds were normal. On the day after admission, his pulse was 180, and the respirations 40. Digitalis caused the symptoms to disappear within twenty-four hours, and was just as prompt in several other attacks. Finally, however, this drug failed in a fresh attack, and the heart became visibly enlarged; the pulse was 172; cyanosis appeared, followed by death. At the autopsy both ventricles were found dilated, and the papillary muscles flattened. There was also fibrous thickening of the endocardium. The valves were intact.—*Münchener med. Wochenschrift*, February 3, 1891.

THE POLYURIA OF PREGNANCY.

M. VOITURIEZ writes that the modifications observed in the urine during gestation are of frequent occurrence, and have for a long time attracted the attention of practitioners. According to Monod, 26 per cent. of all women suffer from urinary disorders during pregnancy. The cases have been divided into two great classes, namely, disorders of secretion

and disorders of excretion, among the former being placed the albuminuria of pregnancy. Independently, however, of the disorders of secretion which have been fully described by various writers (W. Duncan, J. Williams, Lecorché, and others) the great changes produced by gestation in excretion are especially worthy of note. These, as has been pointed out by Monod, most frequently depend upon a concomitant cystitis. Monod has divided these interesting and but little known forms of cystitis into several groups, according to the period of gestation in which they occur. Thus, he describes a cystitis appearing about the fourth week, which is characterized by intestinal pains, very frequent micturition, and the presence of a mucopurulent deposit. From a pathogenic point of view he explains this as due to the vascular relations existing between the bladder and uterus, relations which were well studied by Gillette in 1869. Physiologically, the menstrual uterine congestion reacts upon the bladder, and determines a vesical congestion; pregnancy in profoundly modifying the circulatory conditions of the pelvic organs acts in the same way, and the vesical congestion, in some respects normal, may terminate in a true cystitis. Secondly, he mentions a cystitis arising from retro-displacement of the uterus, which is but seldom encountered before the end of the third month of gestation. It results from fixation of the retroflexed uterus within the pelvis, and becomes very grave if the displacement is not quickly corrected. It is frequently accompanied by absolute retention, and later even by alterations in the walls of the bladder. This is the exfoliating or gangrenous cystitis recently investigated by Mm. Pinard and Varnier. Third, there is a form of cystitis observed toward the end of pregnancy, accompanied by tenesmus and frequently by retention of urine. It is due to the presence of the foetal head which has passed the superior strait. In cases of narrowing of the pelvis, or when labor is prolonged, mortification of the wall of the bladder occasionally occurs following an arrest of the circulation from the excessive and continuous pressure. Finally, after labor, and particularly after instrumental interference, the so-called "post-partum retention of urine" is seen. This retention is analogous to that which Verneuil has described as occurring after operations performed upon the genito-urinary tract.

In the matter of diagnosis, there is but little danger of confounding the polyuria attending pregnancy with diabetes and cystitis. Diabetes occurring in the course of gestation, frequently reveals itself by emaciation, tuberculosis, or cachexia of the mother, or by the death of the foetus and abortion. A chemical examination will remove all doubt. It is easier to mistake this polyuria for cystitis. The latter is sometimes accompanied by polyuria, but this is never considerable. Moreover, there are tenesmus and intestinal pain, often quite severe, which do not exist in true polyuria. Micturition is frequent in both cases, but in cystitis the urine is passed in small amounts, a few drops at a time, whilst in polyuria the urine is abundant at each micturition. Finally, in true polyuria the urine

does not deposit urates, phosphates, mucopus, or blood; there is no pain in the intervals between micturition, the bladder preserving its normal capacity and being susceptible of a certain amount of distention; each micturition completely relieves the patient. The urine of the polyuria of gestation is clear, slightly acid, and of a normal composition, its density being diminished by dilution of the salines and extractives. The prognosis of this condition seems to be good.—*Archives de Tocologie*, December, 1890.

CIRRHOSIS OF THE LIVER IN CHILDHOOD.

HEPATIC cirrhosis is rare in children, as all observers since Gerhardt have noticed. If we except those due to hereditary syphilis, not more than one hundred cases have been reported. Syphilitic infection of the liver was first described by Gubler, in 1847; and Virchow, in 1860, added a remarkably exact description of the histological features of the different forms. With cirrhosis due to syphilitic infection must be included that form due to tuberculosis. One of the first cases of cirrhosis of the liver observed in a child, that of Becquerel (1840) was in a tuberculous patient, but it was not until 1883 that Sabourin spoke of the etiological rôle of tuberculosis in the formation of hepatic cirrhosis. After these two great causes the eruptive fevers must be classed as most prominent in giving rise to hepatic inflammation, as proven by Laure and Honorat (*Revue mens. des Mal. de l'Enfance*, March, 1887). According to a table published by Edwards in the *Archives of Pediatrics*, one-third of all the cases reported were due to infectious diseases. Congenital obstruction of the bile-duct has been recognized in one case as a cause of hepatic cirrhosis. Cardiac lesions are frequent causes of cirrhosis in childhood, quite a number of cases arising from this cause having been reported. While alcohol is not so frequent a cause of cirrhosis in children as in adults, it nevertheless is a more frequent cause than generally supposed. In one hundred cases, seventeen were probably of alcoholic origin, and eleven of the seventeen were certainly due to that agent.

As regards the pathological anatomy of the cirrhotic liver, the following alterations are noticed: There is a dilatation of the interlobular vessels; a proliferation of the connective tissue in the dilated portal spaces, with prolongations extending into the interior of the lobules, even to the central vein; fibrous thickening of the walls of the vessels; proliferation of the biliary canaliculi; and sometimes, at the periphery of the lobules, fatty degeneration of the hepatic cells. Ordinarily the cirrhotic process is generalized, but at times it is disposed in islets. In the first stage of the disease the organ is large, soft, brownish-red or violet in color. Then, as the cirrhosis is established, the liver diminishes in size and becomes hard and elastic.

As in adults, the symptomatology varies much, according to the stage of the lesion and the age of the patient. Thus in young infants vomiting is very frequent, and gastric disturbances are marked. Con-

stipation is the rule, but sometimes diarrhoea accompanies the vomiting. Hæmatemesis is frequently encountered, and occasionally intestinal ulcerations with melæna. Epistaxis is very frequent; hæmorrhages from the mouth, subcutaneous hæmorrhages, hæmorrhagic purpura, and chronic urticaria are also quite common. Two symptoms are especially frequent, namely, jaundice and ascites, and contrary to what occurs in adults, these symptoms often occur together. Their intensity varies much according to the case. In some cases the ascites is scarcely noticeable; in others, on the contrary, it is necessary to tap two or three times. Especially does the ascites play an important rôle in cases in which the cirrhosis succeeds a scarlatinous infection or in cases where alcoholism is manifest. The jaundice is frequently only perceptible, whilst in other cases it is pronounced and permanent. Edema occasionally occurs. Dilatation of the veins of the abdomen and chest are very constant, and especially prominent in cases in which the ascites is pronounced. In one-fifth of the cases reported albuminuria with renal sclerosis was noticed. Convulsions, coma, and ataxo-adyamic phenomena are advanced symptoms indicating a fatal termination. The prognosis is bad, a fatal termination usually following in two or three years. The progress of the disease is more rapid than in adults. From a diagnostic point of view the greatest difficulty lies in differentiating this disease from tubercular peritonitis, and care must be exercised in this respect in each case.—BLANCHE EDWARDS in *Le Progrès Médical*, January 10, 1891.

REGULATION OF PROSTITUTION.

MOELLER in the *Journal des Maladies Cutanées*, December, 1890, makes the assertion that the measures adopted in the regulation of prostitution are inefficient from a hygienic point of view. While admitting that the danger of contagion is greatest during the primary stage of syphilis, and slightly less during the secondary period when the external manifestations of the disease are present, he claims that during the entire secondary period the person infected is able to transmit the disease, even when there are no external manifestations, as has been proved by the infection of nurses from infants and *vice versa*, and by the infection of women during intercourse. This contagiousness of syphilis during the latent stage of the secondary period, is but little marked if the body of the infected person does not present any external solution of continuity; but the slightest scratch or laceration of the skin or mucous membrane considerably increases the danger of contagion. For this reason Moeller claims that persons afflicted with syphilis should abstain from sexual intercourse not only during the existence of the primary sore, or when the secondary manifestations are present, but in the latent period as well. This is the duty of every man or woman affected with syphilis, to neglect which is culpable. He goes on to say that our present regulations are based upon the assumptions of physicians at the beginning

of this century, who believed that gonorrhœa, soft chancre, and syphilis, were all of the same nature, and only contagious in the initial stages. The researches of the succeeding years have entirely revolutionized these views, hence the necessity of altering the laws governing prostitution to meet the dangers which have been discovered.

As a substitute for the present laws upon the subject he suggests a system as follows: Every person who is convicted of certain offences relative to prostitution, or who has committed some infraction of the articles of the penal code, should be, if he be sentenced to imprisonment, submitted to a physical examination at the moment of arrest. This examination should be repeated at the expiration of punishment. If the physician confirms the presence of syphilitic lesions, the patients should be admitted into a hospital for treatment. In addition, they should be forbidden to resume their trade, and instructed not to indulge in sexual intercourse as long as the dangers of contagion exist. They should likewise be obliged to submit to periodical visits during a variable time, to be determined at the beginning of the sickness. The advantage which Moeller claims for this system is, in the first place, the suppression of the registration of prostitutes; second, in place of leaving to hazard or to arbitrary attention the designating of the prostitutes who should be submitted to sanitary visits, it is the prostitutes who, by the infractions they have committed, would designate themselves, in virtue of a positive law which they know and which they ought to recognize. Moreover, the civil authorities would no longer recognize the right of the infected prostitutes to continue their business, and would interdict them from the practice of their profession, so long as they could be dangerous to the public health. Thus would disappear that security which the public accords, rightly or wrongly, to the registered prostitutes, who are considered as healthy in virtue of the certificate delivered after the inspector's visit. Finally, the prophylactic system thus designed would neither violate individual liberty nor the moral law.

THE ELIMINATION OF MERCURY.

THE following table illustrates the results obtained by DR. H. STERN in his investigations regarding the elimination of mercury.

The second column shows the total amount of mercury given. In the majority of cases it was administered hypodermically in the form of the oleum cinereum of 50 per cent. strength; in Case VI. it was used as a plaster, and in one, as inunctions with blue ointment.

In the third column are shown the number of days which had elapsed since the last treatment with mercury, at the time the examinations of the urine began. In the fourth column the number of days during which the total daily amounts of urine were tested for mercury by quantitative analysis, and in the fifth column the total amount of mercury found during those days is shown.

Case	Mercurial treatment.	Time elapsed since last treatment.	Total quantity of urine examined during—	Amount of mercury found.
I.	0.35 c.c. ol. cin. 50 per ct. (hypoderm.) (= 2.713 gr. Hg.)	91 days.	10 days.	0.0002 grm. (0.0031 gr.)
II.	0.41 c.c. ol. cin. 50 per ct. (= 3.1 gr. Hg.) + 0.10 c.c. ol. cin. 50 per ct. (= 1.55 gr. Hg.)	174 "	10 "	0.0006 grm. (0.0093 gr.)
III.	0.45 c.c. ol. cin. 50 per ct. (= 3.40 gr. Hg.)	58 "	10 "	0.0005 grm. (0.00775 gr.)
IV.	0.35 c.c. ol. cin. 50 per ct. (= 2.713 gr. Hg.)	181 "	10 "	Traces.
V.	0.45 c.c. ol. cin. 50 per ct. (= 3.49 gr. Hg.)	35 "	6 "	0.0031 grm. (0.04805 gr.)
VI.	Ca. 10 × 10 c.c. (= ca. 4×4 in.) emplastr. hydr. ol. during 69 days (changed three times).	24 "	7 "	0.0007 grm. (0.01085 gr.)
VII.	Blue ointment rubbed into the skin abundantly for two years. 444 grm. (= 6882 gr.) blue ointment.	21 "	5 "	0.0077 grm. (0.11935 gr.)

—*Wiener klin. Wochenschrift*, Dec. 25, 1890.

REVIEWS.

A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By FRANK H. HAMILTON, A.B., A.M., M.D., LL.D. Edited by STEPHEN SMITH, A.M., M.D. Philadelphia: Lea Brothers & Co., 1891.

IN any work upon general surgery adapted, as so many are, to the needs of the practitioner who is hurried too greatly to look up more than the necessary facts, a complete treatise upon any one subdivision would be out of place. Dr. Hamilton's work has always been recognized as the leading American authority upon fractures, and its great utility has been evidenced from the rapidity with which it has undergone revision after revision, until the volume which lies before us, edited by the author's pupil and at one time assistant, has reached its eighth edition.

Dr. Hamilton's opportunities for observation both in private and military practice during his long professional career, his profound knowledge of the anatomical relations and mechanical adjuvants in the causation and treatment of fractures and dislocations, together with the results of numerous and carefully conducted post-mortem dissections have rendered his book in its later editions of far more value than any other text-book upon these two subjects. The present edition, with none of its former valuable data eliminated and with such additions as the recent advance in surgical treatment (especially in antiseptis) has taught, makes *Hamilton on Fractures* a necessity not only to the surgeon but also to every physician.

The author has condensed and rearranged many of

the clinical reports and added much thereto. Over one hundred new illustrations fully explaining the context, both old and recent, have been inserted, many of which are photographic reproductions of the lesion *in situ*.

The present volume follows its predecessors to a great extent in its general arrangement, part first being devoted to the consideration of fractures, part second to dislocations.

In the preliminary chapters a very thorough exposition is given of the classification of fractures in general, together with their causes, symptoms, diagnosis, treatment, complications and sequelæ. Many theories, a few years ago unknown or doubtful, are here proven correct by numerous cited cases. No more complete collection of the factors in causation and symptomatology has ever appeared. In discussing treatment, the author always presents and strongly upholds his own method in each case, but due weight is also given the opinions and results of others, no matter how widely at variance with his own views. Every method of treatment that has ever been tried in the case in point is mentioned, its good side commended, or its fault detected and the remedy suggested. The chapter upon delayed, vicious, and non-union of bones is especially clear, and must, if carefully studied, be of immense value and comfort to everyone who, if he practises surgery at all, at some time meets with some one of these troublesome results even after most careful treatment. Non-union, about which concerning the frequency of its occurrence statistics are so variable, the author estimates as happening but once in five hundred cases. As far back as the decade 1830-1840, of 946 cases of fracture treated in the Pennsylvania Hospital, not a single false union occurred. We note gladly that Dr. Hamilton does not approve of a primary "fixed" or "immobile" starch, plaster-of-Paris, or silicate-of-sodium dressing in the treatment of recent fractures. Nor does he recommend the "primary roller," so-called. "Immovable dressings are not only liable to become too tight as the swelling augments, but the surgeon may omit to notice that as the swelling has subsided they become too loose." "Except in rare cases and for especial reasons . . . I cannot recommend the employment of any bandages next the skin."

The author then takes up in regular order, commencing with those of the face, all the bones in the skeleton, thoroughly discussing every fracture to which they are liable, giving cause, symptoms, diagnosis, complications, and treatment. Not even the most trivial point is overlooked, and one having read the book feels that all that is known to science upon the subject has been given him from which to draw his own conclusion. It is impossible to give precedence to any one chapter over another, but if any be named, those upon fracture of the vertebræ, humerus, femur, and pelvis are especially full and valuable. As Dr. Hamilton was one of the surgeons in attendance upon the late President Garfield, his account of the gun-shot fracture of the vertebræ, with the course of the case prior to death and photographs of the specimens and official post-mortem records, are most interesting.

Part second—dislocations—follows in arrangement the previous pages. And here the most careful labor has evidently been bestowed upon the chapters describing luxations of the shoulder and hip, the illustrations,

especially those depicting the various mechanisms in reduction, being exceptionally good.

Too much praise cannot be bestowed upon a work of such magnitude, so carefully written. It is everywhere clear, compact, concise. Principles are plainly enunciated and thoroughly elaborated; clinical examples of all possible cases abound. The seven hundred illustrations with which the work is embellished are by far the best we have ever seen in a text-book of this character. Typographically the appearance is good, and subordinate matters being in small print, one sees at a glance the important facts in larger type.

CORRESPONDENCE.

NEW ORLEANS.

THE Charity Hospital Board of Administrators have presented their report to the State Legislature for the year 1890. The total number of patients treated was larger than it has ever been before. 6680 patients were admitted into the wards, 13,315 were treated in the outdoor consultation clinics, 1247 in the dental department and 1349 were attended by the ambulance surgeon. There were 1023 deaths during the year. The mortality of the hospital patients was materially increased during the last three months of the year owing to the large number of cases of pneumonia which occurred during the epidemic of "la grippe" prevailing at that time. The hospital is in good condition and two new buildings for the out-door clinic will be erected in a short time.

On March 5th the Board of Administrators of the City Eye, Ear, Nose and Throat Free Hospital held their first annual meeting. They decided to drop the words "city" and "free" from their title, as many patients, thinking that this hospital is supported by the city, go there when they could pay a physician. The affairs of this hospital are in a prosperous condition. From December, 1889, to December, 1890, 627 surgical operations were performed, and 4816 patients received medical treatment. The number of visits made by applicants for treatment was 3816.

There were thirty-five applicants at the competitive examination for resident studentship in the Charity Hospital for the next two years, of whom the following gentlemen were successful: J. J. Ayo, C. M. Brady, H. S. Lewis, J. R. Jiggitts, C. L. Horton, H. F. Thigpen, H. R. Bohn and E. J. Reeves. The examination was oral, written, and clinical.

About the middle of April an examination will be held for the position of Assistant House Surgeon of the Tours Infirmary. Applicants must be graduates of medicine, and the successful candidate must live in the infirmary. The salary of the position is \$600 a year and board.

The Eye, Ear, Nose and Throat Hospital has reserved rooms for the treatment with Koch's lymph of tubercular patients. One patient, who had lupus, died while under treatment. On the third day after the injections were commenced a large amount of blood and albumin, with granular and hyaline casts, was noted in the urine. The patient died with symptoms of peritonitis. His urine is said to have been normal before the injections

and there was no sign of tubercular trouble elsewhere. The autopsy showed that he died of acute peritonitis and nephritis. Prof. Jos. Jones tendered the bottle of lymph sent him by President Harrison to the authorities of the Charity Hospital, but it was never used.

The Board of Administrators of the new Hospital for Women and Children have made an excellent selection in Dr. E. D. Martin, whom they have elected to the position of House Surgeon. This hospital will be run by the "Ladies' Unsectarian Aid Society." It is a "pay" hospital, and any physician can send his cases there and have them under his own care.

The hospital at the U. S. Barracks has been finished, and reflects credit on Surgeon Wm. Kneedler, who has superintended its construction. It is a frame building, situated in the rear of the officers' quarters, and has all modern conveniences. It will have accommodations for twenty-four patients. The rooms are comfortable and well lighted.

REFLEX PAIN IN REMOTE REGIONS AN EVIDENCE OF INTERNAL HÆMORRHAGE.

To the Editor of THE MEDICAL NEWS,

SIR: Referring to your valuable article in the last number of THE MEDICAL NEWS on "Abdominal Pain in Hæmorrhage into the Pericardium" I wish to communicate the following three cases taken from my records:

Sept. 1880, J. K., a German, aged fifty-nine years, while engaged in playing chess with me complained of an excruciating pain in his left knee, which had developed a few hours before and gradually became more intense. He had never suffered with rheumatism or neuralgia of any kind, never met with any injury and never felt any pain in that knee. An examination gave no result; there was neither redness, swelling nor tenderness. He went home promising to use certain anodynes as directed by me. Late the same night I was sent for, the pain not having diminished. A hypodermic of Morph. sulph., one-sixth grain, gave no relief, and it was followed fifteen minutes later by a second injection of one-fourth of a grain and the pain became less severe. The next day the pain remained about the same; he refused another hypodermic and I had a blister applied at 11 A. M. Otherwise his health was undisturbed, there being no symptom or sign of any other morbid condition. As I was informed later, the pain subsided somewhat about five o'clock in the afternoon, probably from the effect of the blister still covering the spot. A few minutes before 6 P. M. the pain again became suddenly intense; he expressed a desire to use the commode, and while sitting upon it he was seen to fall forward. An immense hæmorrhage extending over the entire base of the brain had caused the fatal issue before I reached him an hour later.

Z. S., aged sixty-three years, a remarkably active and healthy-looking Israelite, while visiting, on the afternoon of Dec. 14, 1884, a lady friend with whom he had been very intimate for years, complained of a severe pain in the left leg, a little below the knee. This pain became so severe that a neighboring physician, a homœopath, was sent for. He had the patient go to bed and administered various internal remedies. At about 9 P. M. the

pain became easier, when suddenly all the symptoms of the classical apoplectic seizure developed. In this state he was removed to his home, where I saw him about 11 P. M. Venesection, the application of croton oil to his tongue, and the internal use of tartar emetic caused him to regain consciousness; but when I saw him the next morning his temperature was 102° and the fatal issue seemed imminent. Later in the day the hæmorrhage recurred and he died the same night.

October 11, 1886, J. F. S., aged fifty-three years, a Catholic bishop, consulted me about a severe pain in his back. The closest examination failed to reveal its cause. It was not lumbago, for no movement of any kind augmented or diminished the pain. After several days of fruitless medication a blister cured it. The bishop then remained well for three months, when the same pain suddenly returned while he was at his home on the night of January 16th. Nothing seemed to give relief, and a little after 5 A. M. death occurred from cerebral hæmorrhage.

No autopsy was made in the last two cases, but the diagnosis was clear. I report these cases without at present desiring to discuss the nature of these reflex pains.

DR. HUGO ENGEL.

NEWS ITEMS.

Army Medical Board.—An announcement was recently made that an Army Medical Board would be in session in New York City during April next for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies. At the time of that announcement there were only five vacancies to be filled. Recent Congressional legislation has, however, permitted the retirement of certain officers, so that there are now fourteen vacancies in the grade of assistant surgeon, with the probability that the number will be increased to seventeen by the time the examining board begins its labors.

As already stated, persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before April 1, 1891, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from which they graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which his Diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. SUTHERLAND,
Surgeon-General U. S. Army.

The Medical and Surgical College of New Jersey.—It affords me much pleasure to inform you that our bill repealing the charter of the Medical and Surgical College of this State has been passed by the Legislature and approved by Governor Abbott. It is hardly

necessary for me to say that this Board feels that it has, in the first year of its existence, done something toward the improvement of the medical profession, not only in New Jersey, but throughout its sister States.

Yours very truly,

WILLIAM PERRY WATSON,

Secretary of the State Board of Medical Examiners,
JERSEY CITY, March 11, 1891.

Notice to the Military Surgeons of the National Guard.—DR. NICHOLAS SENN, of Milwaukee, Surgeon-General of Wisconsin, is desirous of obtaining the name and address of every surgeon of the National Guard for the purpose of taking the preliminary steps toward the formation of a permanent National Association.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 17 TO MARCH 23, 1891.

By direction of the Acting Secretary of War, PASSMORE MIDDLETON, *Major and Surgeon*, is relieved from duty at St. Francis Barracks, Florida, and will proceed to Newport Barracks, Kentucky, and await further orders. The travel enjoined is necessary for the public service.—Par. 8, S. O. 62, A. G. O., Washington, D. C., March 19, 1891.

BIRMINGHAM, HENRY P., *Captain and Assistant Surgeon*.—Is granted leave of absence for one month, with permission to apply for an extension of one month, to take effect upon the arrival at Boise Barracks of Robert R. Ball, First Lieutenant and Assistant Surgeon.—Par. 2, S. O. 39, *Department of the Columbia*, March 13, 1891.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING MARCH 21, 1891.

CLEBORNE, C. J., *Medical Director*.—Detached from Naval Hospital, Norfolk, Va., and ordered to Naval Hospital, Chelsea, Mass.

PENROSE, T. N., *Medical Inspector*.—Ordered in charge of Naval Hospital, Norfolk.

STEELE, JOHN M., *Passed Assistant Surgeon*.—Detached from Coast Survey Steamer "Bache," and granted three months' leave of absence.

GAINES, JAMES H., *Surgeon*.—Placed on the Retired List, March 18, 1891.

RUTH, M. L., *Surgeon*.—Granted a month's leave from April 2d next, with permission to leave the United States.

COMMUNICATIONS are invited from all parts of the world. Original articles contributed exclusively to THE MEDICAL NEWS will be liberally paid for upon publication, or 250 reprints will be furnished instead of payment, provided request for reprints be noted by author at top of manuscript. When necessary to elucidate the text, illustrations will be provided without cost to the author.

Address the Editor: H. A. HARE, M.D.,
1004 WALNUT STREET,
PHILADELPHIA.

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